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ANASTASIA VASILAKIS

Black Ice

BOOK
EXCERPT

A new book by *Computerworld's* Dan Verton makes the chilling argument that terrorists are likely to attack America's digital economy, yet the private sector has done little to protect critical facilities from cyber-terrorism. **Page 35**

Microsoft Plans Foray Into Web Services Management

BY CAROL SLIWA

Microsoft Corp.'s effort to become a bigger player in the systems management market will extend to Web services as early as next year, but more likely around 2006 with the next Windows server release, company executives disclosed. Eric Rudder, senior vice

president of servers and tools at Microsoft, told *Computerworld* that the company plans to have "compelling offerings" to help users both manage Web services and use them to manage their other systems.

Start-ups have gotten the early jump in the fledgling Web services management

EMERGING MARKET

Web services management is beginning to attract vendor attention

Established management vendors: CA, HP, IBM, BMC

Smaller, jump-play vendors: Acton, AmberPoint, Confuent, Itravio, NextAxiom, Talking Blocks, Swingtide

market, but new offerings are expected by year's end from Computer Associates International Inc. and Hewlett-Packard Co.

Microsoft plans to enter the Web services management field by using technology in a future version of the Windows server operating system and

Microsoft, page 49

IBM, Bankers at Odds Over OS/2 Migration Path

Vendor advises OS/2 users to switch to Linux, but ATM makers are leading push to Windows

BY LUCAS MEARIAN

IBM, which will end support of its aging OS/2 operating system after 2006, is recommending that OS/2 customers migrate to Linux instead of Windows.

But there's little likelihood that IBM's advice will be widely heeded. The last bastion of OS/2 computing, branch banking, is locked into a Windows migration strategy because the major manufacturers of automated teller machines are going the OS/2-to-Windows route.

Wells Fargo & Co. began its migration from OS/2 to Windows three years ago, said Jonathan Velline, senior vice president of ATM banking at

the San Francisco-based bank. That move was prompted by the expectation that IBM would drop OS/2 support, as well as by the need to upgrade data encryption methods [QuickLink 40342], support electronic check-image processing and provide audio services for visually impaired users, Velline said.

"It's easier for us if we're trying to deliver customer information through our teller systems with Windows," he said. The bank has so far replaced 3,800 of its 6,200 ATMs with Windows-based systems and expects to complete the migration by 2005. Web-enabled ATMs could eventually

OS/2 Migration, page 14

MIGRATION
STRATEGIES

Jobless Push for Visa Reform

Conn. activist group behind several H-1B, L-1 bills in Congress

BY PATRICK THIBODEAU
WASHINGTON

The controversial L-1 and H-1B visas are under assault in Congress, in large part because of the activism of a group of laid-off Connecticut IT workers.

Of the five bills that have been introduced this year to reform the two visa programs, three were written by Connecticut lawmakers.

"We've heard quite a bit from constituents in our district concerned about losing their jobs," said Lesley Sillman, a spokeswoman for Rep. Rosa DeLauro (D-Conn.), who is seeking restrictions on L-1 visa use.

The group DeLauro has been working with, the Organized Visa Reform, page 49

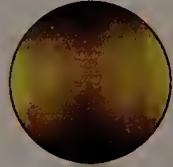
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For additional stories about visa issues, go to our Web site:

QuickLink s1490
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The new Power Mac® G5 is here. It's the world's fastest* personal computer, and the first with a 64-bit processor. At its heart are two revolutionary PowerPC G5 processors,



*The PowerPC G5 chip.
The world's first 64-bit
processor for personal
computers.*

running at speeds up to 2GHz. And since these are 64-bit processors, they can access up to 8GB of memory in the Power Mac G5, which is double the

4-gigabyte memory ceiling of every other PC in the world. The G5 processors also have the world's fastest frontside bus, running at 1 gigahertz, which gets data to the processor almost twice as fast as the 533-megahertz bus found in the next-fastest personal computer (a dual 3.06GHz Xeon machine).

In side-by-side speed tests using industry-standard benchmarks, the dual 2.0-gigahertz Power Mac G5 is up to 41% faster than both the fastest Pentium 4 and dual-processor Xeon workstation. And the results get even better when using real-world applications:

SPECint_rate 2000: Integer calculations

Dual 2GHz PowerPC G5	16.9
Dual 3.06GHz Xeon	16.7
3GHz Pentium 4	10.3

SPECfp_rate 2000: Floating-point calculations

Dual 2GHz PowerPC G5	15.8
Dual 3.06GHz Xeon	11.1
3GHz Pentium 4	8.1

Independent tests show the Power Mac G5 edges out the competition on integer and blasts past them in floating-point.



*The PowerPC G5 chip is based
on IBM's highest-performance
64-bit supercomputer processors.*

music and video to science and mathematics.

Impressed? We haven't even touched on

the Power Mac G5's other features. Like its ultrahigh-bandwidth system architecture, featuring AGP 8X, PCI-X, FireWire® 800, Gigabit Ethernet, up to 500 gigabytes (yes, that's half a terabyte) of internal Serial ATA storage and a SuperDrive™ for DVD authoring. All inside a stunning, professional-quality aluminum enclosure that features four discrete computer-controlled cooling zones for whisper-quiet operation. Together, they make the Power Mac G5 a true breakthrough in personal computing.





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Catering to True-blue Customers

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Offshore Outsourcing Not Such a Threat

CAREERS: Ward Larkin contends that there are numerous reasons why the gloom-and-doom scenarios that many people are spinning won't come to pass. **QuickLink 40490**

Bringing Value to an IT Department Near You

DEVELOPMENT: As the fallout from the Internet bubble settles, look for companies to transform their IT departments into lean, effective and innovative organizations. **QuickLink 40390**

Users Not Quite Ready to Drink Their Storage by the Glass

STORAGE: New metered storage capabilities from EMC and Hewlett-Packard show promise but haven't yet won users' hearts, says this article from *SNW Online*. **QuickLink 40385**

Using NAS to Simplify Backups

STORAGE: Dell Inc.'s Russ Holt takes a look at three scenarios where network-attached storage offers advantages over older backup technologies. **QuickLink 39850**

Linux Package Managers

OPERATING SYSTEMS: This excerpt from *Linux in a Nutshell* describes how to use packaging systems. **QuickLink 40433**

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AT DEADLINE

Axiom Confirms Breach by Hacker

Axiom Corp., which maintains a database of information about consumers, confirmed that a hacker downloaded a small amount of data as it was being transmitted between the company and some of its corporate clients. Little Rock, Ark.-based Axiom said the breach involved a file transfer protocol server outside its firewall. The company added that a former employee of an Axiom client has been arrested.

Sun to Acquire Provisioning Tools

Sun Microsystems Inc. said it has signed a deal to acquire CenterRun Inc., a Redwood City, Calif.-based developer of application provisioning software. Sun didn't disclose the cost of the acquisition, which is due to be completed by the end of next month. Sun said CenterRun will become part of its software group and expand its N1 data center management strategy.

Antitrust Review Ends on Palm Deal

Palm Inc. in Milpitas, Calif., said the antitrust-related waiting period on its proposed acquisition of handheld device rival Handspring Inc. has expired without the companies being asked to provide more information to federal regulators. Palm agreed to buy Mountain View, Calif.-based Handspring in June [QuickLink 38997]. The deal is expected to close in the fall.

Short Takes

San Diego-based software vendor PEREGRINE SYSTEMS INC. said it has completed a Chapter 11 reorganization and emerged from bankruptcy protection. . . . BROADCOM CORP. in Irvine, Calif., agreed to pay INTEL CORP. \$60 million to settle a series of patent-infringement lawsuits.

Oracle to Embrace Grid Computing in Upgrades

User interest in upcoming rollouts tempered by reliability, pricing concerns

BY MARC L. SONGINI

AT ITS ORACLEWORLD user conference in San Francisco next month, Oracle Corp. plans to take the wraps off the next generation of its flagship database, which is being upgraded to support more extensive clustering and grid-computing capabilities.

Oracle last week wouldn't disclose full details about the upcoming release. But Robert Shimp, the vendor's vice president of database marketing, said features will be added to make it easier for users to exploit grid computing models, in which applications are run across large numbers of relatively inexpensive servers.

The upgrade is being dubbed Oracle Database 10g and will be accompanied by

similarly named versions of Oracle's application server software and Enterprise Manager tools. The 10g release will also include increased scalability, reliability and security capabilities, Shimp said.

In addition, the three products are being developed jointly for the first time. According to Shimp,

that should result in tighter integration and more automated self-management capabilities. The software is in beta-testing; a firm release date hasn't been finalized, he said.

Several Oracle users expressed interest in grid computing if it lives up

to the promises being made by Oracle and other vendors. But they noted that grid technology still faces some potential roadblocks, including reliability and pricing concerns.

For instance, IT staffers at the California Public Employees Retirement System (Calpers) in Sacramento are facing tight budgets and might use both Linux servers and grid computing products in an effort to cut costs, said

Jack Corrie, division chief of IT services at the pension fund.

But he added that Calpers officials need to do their homework to make sure that an emerging concept like grid computing is sustainable from a technology standpoint.

Hal Kuff, sys-

"We can't achieve ROI by licensing reserve capacity for use three hours a day."

HAL KUFF, SYSTEMS AND NETWORK MANAGER, TESSCO TECHNOLOGIES INC.

tems and network manager at Tessco Technologies Inc. in Hunt Valley, Md., said Oracle's pricing model is a big stumbling block. Although Kuff approves of the vendor's technical direction, he said he doesn't see the point of buying cheap Linux servers and running them in a cluster if Oracle is going to charge a premium price to license its software for each CPU in those systems.

"We've been waiting patiently for them to evaluate their per-CPU licensing model in a blade [server]-type of environment," Kuff said. "We can't achieve ROI by licensing reserve capacity for use three hours a day. Oracle needs to make the price right." For Tessco, it now would make more economic sense to buy a big Unix server, he added.

"Definitely, the pricing models of grid computing have been a big question in the minds of customers," Shimp acknowledged. Oracle hasn't modified its licensing policies thus far, "but we are aware of all the questions, and we're working on that," he said. ▀

Microsoft Office Users Get 'Step-Up' License Option

BY CAROL SLIWA

Companies planning to upgrade to the standard version of Microsoft Corp.'s new Office System applications will find a new licensing option to enable them to switch to the Professional Edition at a lower cost than in the past.

Microsoft announced last week that customers holding volume licenses with upgrade rights for Office Standard can buy a "step-up license" to get the Professional Edition by merely paying the cost differential for the license plus the Software Assurance maintenance fee. Under current terms, customers must buy new licenses to switch.

Office 2003 is due to ship this fall, and the new step-up license option will be available

beginning Sept. 1. The option will expire after a year.

Office product manager Simon Marks said Microsoft is offering the step-up license because of newly introduced differences in functionality between the professional and standard editions. He said the professional version has more advanced XML capabilities as well as information rights management to control access to sensitive information.

Deciding Factors

Even Software Assurance holders for the Standard Edition who don't buy the step-up license will be able to upgrade to the professional versions of Word, Excel, PowerPoint and Outlook with the added XML and information rights capa-

bilities. To qualify, they must have upgrade contracts in force between Sept. 1, 2003, and March 31, 2004.

But they won't get the other Professional Enterprise Edition components — the Access database, the desktop Publisher tool, Business Contact Manager and InfoPath, a new product that allows users to create XML-based forms and submit them to XML-enabled systems.

Analyst Julie Giera at Forrester Research Inc. in Cambridge, Mass., said Microsoft has added a layer of complexity that will make it challenging for customers to choose the right Office version for their businesses. "And this choice is a really important one because a licensing agreement runs three years, and migrations are expensive," she said.

Users with more pressing projects said they won't immediately upgrade to Office 2003. Others said they plan to

upgrade but the new XML and information rights capabilities won't be the main drivers.

"We are currently a mix of [Windows] 2000 and XP, and want to go to one version," said Stanley Johnson, LAN services manager for Multnomah County, Ore. He said Office 2003 may be the convergence point, but he isn't sure when. ▀

NEW FEATURES

MICROSOFT OFFICE PROFESSIONAL ENTERPRISE EDITION 2003. Word, Excel, Outlook, PowerPoint, Access, Publisher, Outlook with Business Contact Manager, and InfoPath. Includes additional support for XML and information rights management content creation and authoring.

Word, Excel, Outlook, PowerPoint.

Note: Enterprise Edition applies to volume license holders.

Sponsor's Surrender Won't End UCITA Battle

Related licensing issues still expected to surface in new vendor contracts

BY PATRICK THIBODEAU
WASHINGTON

UCITA is far from dead in David Lewis' world. The CIO of Deseret Mutual Benefits Administrators in Salt Lake City continues to see the act's provisions — including a vendor's right to remotely disable users' software — appearing in software contracts he's asked to sign.

And Lewis said he doesn't expect that to change as a result of the decision last week by the National Conference of Commissioners on Uniform State Laws (NCCUSL) to pull the plug on its stalled push for state-by-state adoption of the controversial software licensing law.

"I think software licensing will be an ongoing battle," said Lewis.

At its annual meeting here last week, the Chicago-based NCCUSL said it couldn't overcome the "wide-ranging opposition" that stymied adoption of the Uniform Computer Information Transactions Act (UCITA) beyond its passage by Virginia and Maryland in 2000.

Although it won't spend any more time or money backing UCITA, the NCCUSL will continue to support it. For that reason and others, UCITA will remain a force in software contract licensing and something corporate IT managers will have to deal with for years, say people on both sides of the issue.

First, UCITA is the law in Maryland and Virginia, and vendors can choose those states as the governing law in a software contract, even if the vendor and user are located in different states.

Second, in the absence of a uniform law governing soft-

ware licensing and online contracting, it will be up to the courts to sort out licensing issues, such as whether licensing agreements for packaged software are enforceable. And the courts can use UCITA as a blueprint to craft decisions.

"It remains a source of law," said Jean Braucher, a law professor at the University of Arizona in Tucson.

Moreover, there's nothing to stop vendors from seeking state UCITA adoptions without the help of the NCCUSL.

With those rounds incoming, the Washington-based group spearheading opposition, Americans for Fair Elec-

tronic Commerce Transactions (AFFECT), will continue the battle. "I think we're going to remain vigilant," said Miriam Nesbit, president of the group and legislative counsel at the American Library Association in Washington.

AFFECT will meet next month to plot its course. One option is continuing a push for

so-called bomb-shelter legislation intended to prevent vendors from applying Maryland's or Virginia's UCITA provisions in another state. Vermont, Iowa, North Carolina and West Virginia have adopted that preventive legislation.

Chuck Morton, an attorney at Venable LLP in Baltimore who helped win Maryland's

adoption of UCITA, said he believes the lack of court challenges over implementation of UCITA in Virginia and Maryland is evidence that the law "isn't as revolutionary as either camp would have led you to believe."

Uniform commercial law usually evolves from generally accepted businesses practices, but neither side in this battle agrees on those practices.

"Few disagree that the current Uniform Commercial Code is ill-suited for use with licensing and other intangible transactions," said Alan Fisch, an intellectual property attorney at Howrey Simon Arnold & White LLP in Washington. "But for any new uniform code to be an effective solution, there must be widespread acceptance of its underlying principles; which is not true of UCITA." ▀

FAQ

Why did the NCCUSL decide to end its push for state adoptions? The organization, which is funded by the states to craft uniform commercial laws, was outgunned by a savvy and potent network of lobbyists representing the insurance industry and library groups, in particular.

Are there concrete examples of the opponents' effectiveness? A good one is the fact that www.ucita.com is the opponents' Web site.

What does this mean for the future of UCITA? The courts will shape future licensing rules, but UCITA may well turn out to be a blueprint for future decisions.

New Privacy Rules Could Mean Headaches for Financial Services IT

Ballot initiative, judge's ruling may reach beyond Calif.

BY JAIKUMAR VIJAYAN

A consumer-privacy-related ballot initiative by a political group in California could complicate matters for financial services companies that are already scrambling to comply with other regional and federal privacy mandates.

And just like the recently instituted California state privacy law SB 1386 [QuickLink 39515], the proposed ballot measure will have a nationwide reach, privacy experts said.

A group called Californians for Privacy Now on July 30 announced that it had collected more than 550,000 signatures supporting a ballot initiative that would require financial services companies to get explicit opt-in permissions from consumers before sharing their personal information with third parties.

The issue is expected to be

voted on in a March 2004 ballot unless a compromise is worked out before then.

The privacy group's announcement came one day after a U.S. District Court judge in Oakland upheld sections of three San Francisco Bay area privacy ordinances that require banks to get consumers' permission before giving information to unaffiliated parties.

Such developments could mean a lot of headaches for financial services companies, said Charlene Brownlee, an attorney at Fulbright & Jaworski LLC in Austin.

"The problem when states start enacting legislation in sectors already covered by federal legislation is that companies have to comply with a patchwork of laws rather than a single, comprehensive set of obligations," she said.

Though the federal Gramm-Leach-Bliley Act allows states to enact laws that are stronger than federal privacy statutes, "laws varying from state to state create a logistical and expen-

sive nightmare for companies" that have already spent millions on compliance, Brownlee said.

Opt-in provisions like the one being proposed by the California privacy group are a welcome step, but they need to be made part of a wider federal privacy mandate, said Michael Overly, a partner at Foley & Lardner, a Los Angeles law firm.

"The problem when you have a checkerboard of rules is that it becomes incredibly

“The problem when you have a checkerboard of rules is that it becomes incredibly hard for companies to figure out and keep track of what needs to be done.”

MICHAEL OVERLY, PARTNER,
FOLEY & LARDNER

hard for companies to figure out and keep track of what needs to be done," he said.

Despite the level of concern raised by California's SB 1386, for instance, many companies both inside the state and out don't understand its scope or what needs to be done to comply, Overly said.

Financial services firms in California can expect some sort of restrictions on the use of customer data by mid-2004, according to a Gartner Inc. note on the ballot initiative.

Financial services companies around the country should view these developments within a state as large as California as indicative of a national trend, the Gartner report added.


But instead of trying to comply with such laws one state at a time, it might make sense for companies to comply with the "strongest state legislation" related to privacy, Brownlee said.

Wachovia Corp. in Charlotte, N.C., is doing just that.

"We are taking the stance that if we have to notify anyone in California we will do that in other states as well," said Luis Suarez, vice president of PKI and encryption key management at Wachovia. ▀

UCITA IN-DEPTH

To read more on this subject, go to our UCITA Special Coverage page:

 **QuickLink a1690**
www.computerworld.com

BRIEFS

EC Details Microsoft Antitrust Remedies

The European Commission outlined a series of proposed anti-trust remedies against Microsoft Corp. and said the company may be fined as much as 10% of its annual worldwide sales. The commission sent Microsoft an updated "statement of objections" detailing alleged monopoly abuses by the vendor. Microsoft said it's studying the document "and will continue to work toward a positive resolution of these issues."

Equifax, IBM Sign Expanded IT Deal

Equifax Inc., an Atlanta-based company that compiles credit reports and sells business management tools, said it has expanded an IT services deal under which IBM manages its mainframes, midrange servers and networks. The new 10-year contract is global in scope and is worth \$400 million, increasing the total value of the deal between the two companies to \$800 million.

Intel May Owe \$600M in Taxes

Intel Corp. has been notified by the Internal Revenue Service that it may have to pay \$600 million in back taxes for 1999 and 2000. In a regulatory filing, Intel said that the IRS is proposing adjustments to tax benefits taken by the company on export sales and that it may make similar claims for subsequent years. Intel said it disputes the proposed charges.

Short Takes

ASCENTIAL SOFTWARE CORP. in Westboro, Mass., announced a \$106 million deal to buy Mercator Software Inc., a Wilton, Conn., vendor of application integration software. . . . **AGILE SOFTWARE CORP.** in San Jose said it's buying Waltham, Mass.-based Eigner Inc. for an undisclosed price, combining two makers of product life-cycle management tools.

MARK HALL ■ ON THE MARK

Spam + Outsourcing = Peace of Mind . . .

. . . for e-mail users, according to Ashok Kalle, president of Pathway Communications in Toronto. He claims that better than 99% of spam can be filtered by a combination of his company's NetPulse appliance, which becomes generally available on Aug. 15, and an optional \$1-per-month-per-mailbox service that employs **workers in India who review every single piece of spam** sequestered from a mail queue by the spam filter. "It's fairly easy for a trained individual to figure out what spam is," he says. "We want to offer another filter layer not to catch spam,

which the appliance does, but to catch false positives." For anyone who has missed an important message due to a strict spam filter, this could be a big plus. NetPulse is based on the open-source Spam Assassin software combined with Pathway's proprietary filtering technology and, of course, **those luckless folks in India.** ■ Pathway Communications is also a vendor of the oft-maligned intrusion-detection system (IDS). IDSs are widely

known to send so many alerts that network admins end up ignoring them, which can lead to trouble, since **some alerts should be acted upon.** That's why Guidance Software Inc. in Pasadena, Calif., has come up with a product called EnCase Enterprise, which can receive an alert and, according to CEO John Patzakis, "quickly look at the binaries that caused the alert to see if the system

has been hacked." EnCase looks at every sector on a hard drive's platters and can identify crackers' tools, renamed files and other telltale signs that something is amiss with the drive. Next week the company will unveil new features in the 4.15 upgrade. The most significant is that IT security staffs can now **scan drives across local- or wide-area networks.** Previously, the security software had to run locally on the suspect system. EnCase lets users de-

termine exactly how a file got onto a drive, which can be helpful in situations where litigation is involved. Erased files can be recovered and "hidden partitions" found, claims Patzakis. That puts a damper on corporate espionage and even rogue businesses that are using company technology, such as one unnamed customer's IT workers who were caught by EnCase augmenting

their salaries by running a porn site from the data center. Pricing starts at \$2,500. ■ Ken Boyd, CIO of the Remedy division of Houston-based BMC Software Inc., has some advice for IT executives in the midst of an acquisition: Don't let one IT group force its ways on the newly merged organization. He should know. In less than two years, he went through a botched acquisition by San Diego-based Peregrine Systems Inc. and what he calls a successful one by BMC. In fact, he goes so far as to say that **Peregrine's strategy to force an inferior, albeit corporate, standard technology on Remedy was "a contributing factor"** to the resale of Remedy to BMC. What BMC has done right, he says, is to pick the best technologies from both operations. Also, he says BMC has been "more focused on business policies and not a desire to control," which was not the case with Peregrine. ■ Eric Raymond, author of the seminal work on open-source technology *The Cathedral and the Bazaar*, has released a "beta" (Version 0.82) of his much anticipated book *The Art of Unix Programming*. While not exactly a coder call to arms, the book does argue that the operating system's original intent as a "general-purpose timesharing system . . . is rapidly receding into the mists of history." Nonetheless, the "peer-review-intensive development of freely shared source code" philosophy of Unix's adherents is the foundation for open-source technologies. Attempts by Unix vendors to eschew open-source practices have hurt the OS, making Linux "the last best hope to fulfill the rebel dreams of early Unix days." His publisher, Addison-Wesley, expects copies of the manifesto to arrive in bookstores in September. Oh, and there are hundreds of pages of instructive text for more apathetic programmers who just want to hack the system. ▀

Wireless Workflow

Bothell, Wash.-based **Dexterra Inc.** promises that field service technicians with Pocket PCs or Windows Tablets will get improved wireless access to back-end applications such as CRM and ERP systems; better workflow operations; new print services with Bluetooth mobile printers; and zippier performance, when it ships **Dexterra Field Service 2.0** late in the third quarter. Pricing hasn't been set.

Grocer Consolidates IT Management Tools

BY MATT HAMBLÉN

Albertsons Inc. today will announce that it's close to finishing a rollout of Marimba Inc.'s desktop and server management software throughout the 2,300 food and drug retail stores it operates in 31 states.

Albertsons began deploying the software in March for tracking IT assets and making automated software changes to tens of thousands of devices, including servers, desktop and laptop PCs, and point-of-sale terminals, said Kia

Behnia, chief technology officer at Mountain View, Calif.-based Marimba.

Jeff Tibbitts, an IT project manager at Boise, Idaho-based Albertsons, said the rollout is scheduled to be done by mid-September. "Getting a handle on our hardware and software is important," Tibbitts said. "We had a variety of automated tools and manual processes in the past, so this is an effort to consolidate all of that."

He added that Albertsons, which had revenue of \$35.6 bil-

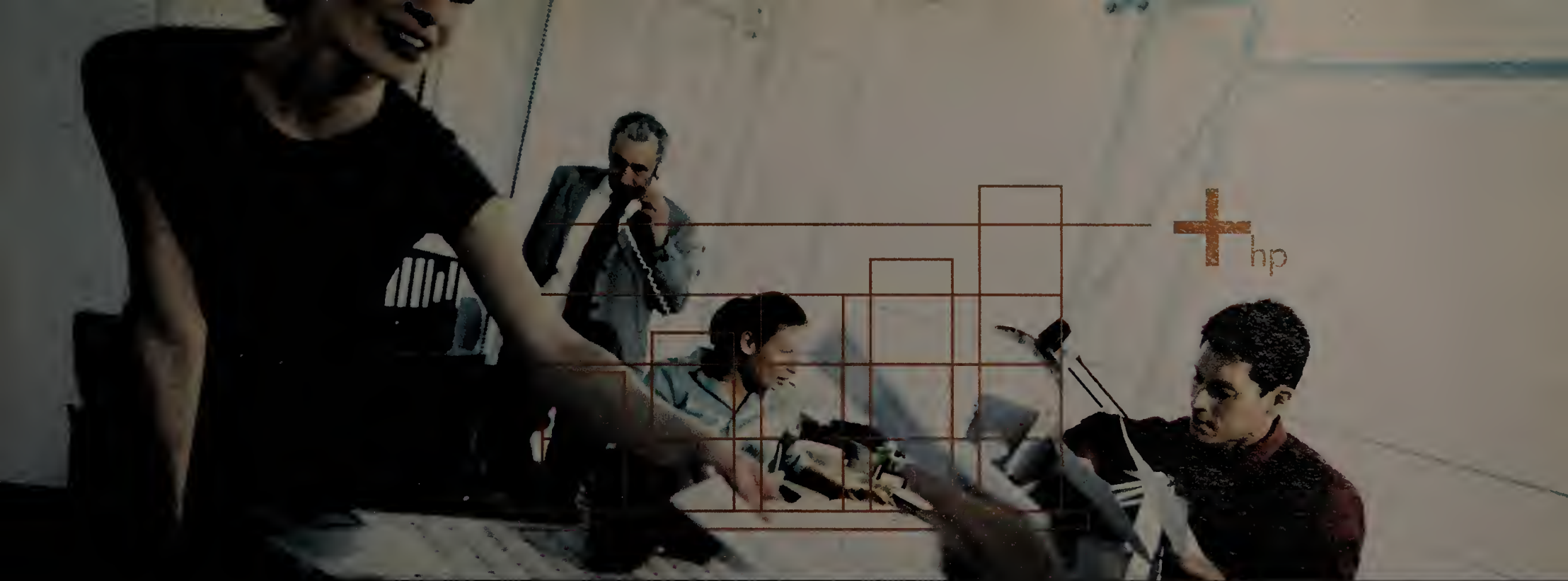
lion in the fiscal year that ended Jan. 30, will also use Marimba's software to automate the deployment and management of antivirus software and security patches.

Fred Broussard, an analyst at IDC in Framingham, Mass., said Marimba has struggled in the management software market against vendors like IBM's Tivoli Software unit and Computer Associates International Inc. "Marimba is in a race with the big guys, and this is a market where it is in-

creasingly hard [to compete]," he said.

But retailers make up a large part of Marimba's user base, and Tibbitts said Albertsons chose that vendor over Tivoli, CA and other rivals because its software can scale across the grocer's operations and is flexible enough to track various hardware platforms and up to 350 applications.

Albertsons also expects to get a return on its investment through improved efficiencies within 11 months of completing the Marimba installation, Tibbitts said. He wouldn't disclose the cost of the project. ▀



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New Products Bolster Remote System Security

Managers turn focus to client-side risks

BY JAIKUMAR VIJAYAN

RISING CONCERNS that remote computers could compromise network security are prompting some companies to lock down such systems and enforce strict compliance with remote access security policies. And several vendors are stepping up with products to help.

Fremont, Calif.-based Sygate Technologies Inc. next week will roll out an upgraded version of its Sygate Secure En-

terprise suite with new functions for automating and enforcing security policies on remote systems that are used to dial into corporate networks.

Rival InfoExpress Inc. in Mountain View, Calif., later this month will roll out a similar product with support for multiple remote client hardware types and operating systems. And San Francisco-based personal firewall vendor Zone Labs Inc. on July 30 started shipping Integrity 4.0, a centrally managed endpoint,

or client-side, security suite with a component for enforcing security policies on all virtual private network-connected corporate network users.

The goal of using such software is to ensure that remote workers don't compromise network integrity by using improperly secured systems, said Kenneth Tyminski, CIO at Prudential Financial in Newark, N.J.

"To me, it's all about controlling endpoint security," said Tyminski.

"Basically, such products allow you to specify what applications, what programs and

what configurations should be available on a [remote] system," said Jim Kirby, senior network engineer at Wells' Dairy in Le Mars, Iowa.

Prudential has rolled out Sygate's software to 20,000 employees who either are mobile or remotely access the company's networks on a part-time or full-time basis.

Sygate's agent software, which serves as a personal firewall, sits on each remote device and ensures that the right configuration and security settings are in place at all times, especially when the computer isn't connected to the corporate network.

The software, for instance, can recognize when a remote worker's system is connected to the Internet and automatically shuts down ports and functions that could be used

New Endpoint Security Products

Sygate Secure Enterprise 4.0
Comprises a client-side security agent on each device, an enforcement server for ensuring compliance and a management console.

Zone Labs Integrity 4.0
Provides centralized security policy implementation and a management console.

InfoExpress CyberArmor Personal Firewall and CyberGatekeeper: Controls access to networks based on network system audit.

Note: License fees for such software vary widely by installation size. Per-user licenses can range from a low of around \$30 to around \$100 for large installations to around \$100,000.

Postal Service Pursues 'Intelligent Mail' Despite Privacy Concerns

Critics decry use in antiterror efforts

BY DAN VERTON
WASHINGTON

A presidential commission tasked with studying ways to make the U.S. Postal Service (USPS) more efficient has recommended that it work with the Department of Homeland Security to develop sender identification technology for all U.S. mail.

In its final report, released July 31, the President's Commission on the U.S. Postal Service said sender identification technologies such as personalized stamps that embed digital identification information would not only improve USPS tracking and delivery operations, but would also enhance the security of the mail system.

But civil liberties groups and even some private-sector technologists fear that requiring what's being called "intelligent mail" for all users of the postal system is overreacting to the terrorism threat.

Ron Quartel, CEO of Freight-Desk Technologies Inc., a Dunn Loring, Va.-based company that develops technologies for the shipping industry, said intelligent mail wouldn't likely have much impact on commercial mailers because most commercial transactions are already semipublic. It would, however, have a "huge dampening effect" on the personal use of mail, he said.

"There are no obvious technological barriers to the postal commission suggestion," said Quartel. "But do Americans really want every facet of their

lives inventoried by a federal bureaucrat? I don't."

The focus on security stems from the 2001 anthrax attacks that took advantage of the anonymity of the mail system.

The USPS in January formed a committee with the help of the private sector to begin studying intelligent-mail technologies and infrastructure requirements and has since established a corporate plan for intelligent-mail implementation. That plan includes analysis of IT infrastructure upgrades, such as server consolidation, that are necessary to

begin the program. However, it is unclear if the USPS plan envisions the mandatory use of intelligent mail for all USPS customers as the commission recommended. A spokesman for the USPS said the commission report is still under review and it would be premature to discuss future USPS plans.

However, the USPS intends to award a contract in November for mobile data collection devices that could serve as intelligent mail scanners.

Ari Schwartz, associate director of The Center for Democracy and Technology in Washington, said intelligent mail was created as a commercial tool to boost efficiency. But to use it as a homeland security tool raises legitimate privacy concerns, Schwartz said. "The anonymity of the mail is something that the Postal Service has been proud of," he said. "The history of the country is such that we want people to be able to speak anonymously, and taking away [anonymous mail] altogether does not seem to be a good idea."

to download malicious code on the system.

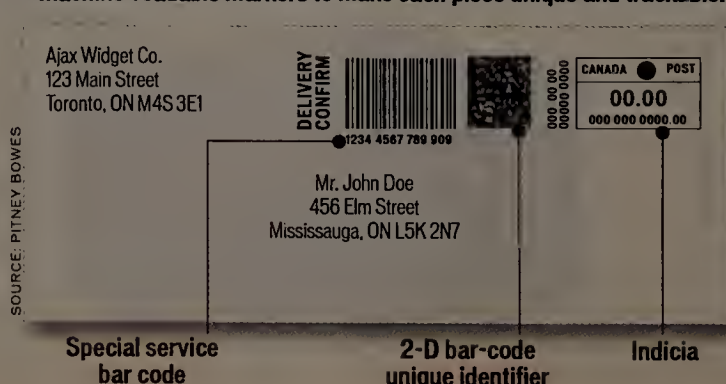
Each time a remote worker attempts to access the corporate network, a Sygate enforcement server first checks with the agent on the user's system and ensures that the device meets all policy requirements such as having functioning firewalls, antivirus software, proper patch levels and registry settings.

"We want to make sure that when the machine is connected to us, it is in a trusted state with all the appropriate protections," Tyminski said. Machines that aren't compliant have access blocked until remedial action is taken.

Thomson Corp.'s Medstat Group in Ann Arbor, Mich., requires all PCs with Internet access to run a personal firewall, antivirus software and a program that scans for malicious activity. The company has installed InfoExpress' CyberArmor technology on 175 remote systems. An enforcement component called CyberGatekeeper ensures that no one has uninstalled the firewall or other protections.

"Remote users can uninstall or stop services on most of the software on their PC. In doing so, they will not gain access to our VPN server or our network," said Lee Wolf, a network engineer at Thomson Medstat.

Like this Canada Post sample, intelligent mail would incorporate data-rich, machine-readable markers to make each piece unique and trackable.



STAVING OFF IRRELEVANCE

The presidential commission recommended a range of reforms at the USPS.

QuickLink 40387
www.computerworld.com

Avaya Rushes to Set Up Women's World Cup Network

Last-minute move of soccer tourney to the U.S. poses challenges for IT staff

BY MATT HAMBLÉN

With the SARS virus forcing soccer officials to move this year's Women's World Cup finals from China to the U.S. at the eleventh hour, workers at Avaya Inc. are scrambling to set up a promised voice and data network in time for the tournament.

The 16-team tournament is scheduled to start Sept. 20, and Avaya wasn't given the locations of the six stadiums being used in the U.S. or the final network requirements until July 13. Doug Gardner, managing director of the World Cup technical program at Avaya, said that in contrast, network preparations had been under way in China for more than a year before the Federation Internationale de Football Association (FIFA) decided in May to move the finals to the U.S. because of the SARS outbreak.

"The relocation has posed many significant logistical challenges, [but] I am happy to report we are on track," said Michael Kelly, head of IT solutions at FIFA, the sport's governing body. When the decision to move the games to the U.S. was announced, "Avaya sprung into action," Kelly said.

Basking Ridge, N.J.-based Avaya will reuse much of the switching equipment it deployed for the Men's World Cup finals that were held in Japan and South Korea last

summer, Gardner said. The network for that tournament supported a total of about 40,000 devices and 120,000 connections [QuickLink 31110].

Clay Sutton, a vice president of network consulting at Avaya, estimated that the network needs for the Women's World Cup will be about one-third what they were for the men's finals, which involved 32 teams and 20 stadiums. In addition to the devices that are being reused from last year, some new cabling and switching gear was ordered in July, Sutton said.

That equipment was due to

begin arriving late last week at Avaya's network operations center in St. Petersburg, Fla. Workers at the operations center will monitor the network for the duration of the 32-match tournament, which will culminate in the championship Oct. 12 in Los Angeles.



AVAYA is installing LANs at six U.S. stadiums for the upcoming Women's World Cup, which will host 16 teams, including Mia Hamm's U.S. squad.

Avaya also will install one of its S8700 switches at the Westin Hotel in Long Beach, Calif., where FIFA's tournament headquarters will be located. The switch will transfer calls from both IP and digital phones, Sutton said. The credentials of players, team officials and other participants will be authenticated through network connections to FIFA's home office in St. Gallen, Switzerland, and links will also be set up to U.S. government security and immigration systems. In addition, real-time data will be transmitted to a broadcast center in New York.

At each of the stadiums, Avaya is installing wireless and wired LANs to support the accreditation of players and journalists, and to give reporters pass-

word-based access to a Yahoo Inc. Web portal that will provide information about the games. Some of the installations could take place just days before the start of the tournament, Sutton said.

Gardner said that wherever possible, Avaya will take advantage of existing IT infrastructures at the stadiums, such as 802.11b Wi-Fi networks that have been set up at Gillette Stadium in Foxboro, Mass., and Lincoln Financial Field in Philadelphia.

Avaya paid more than \$100 million for the right to build the networks for last year's men's final, the women's event and the next men's tournament in 2006. Gardner said the company hasn't yet tabulated what it expects to spend as part of this year's project. But he noted that with the location change and the resulting time constraints, the difficulty of the task rates about an 8 on a scale of 1 to 10. ▀

Judge Approves MCI Deal; Sprint Faces Possible Ban

MCI gets OK for fraud settlement with SEC, denies call-routing claims

BY MATT HAMBLÉN

WorldCom Inc. last week received approval from a U.S. bankruptcy court judge for a financial fraud settlement deal with the Securities and Exchange Commission and denied in a court filing that it has engaged in illegal call-routing, as some of its rivals claim.

Meanwhile, Sprint Corp. said the inspector general of the U.S. General Services Administration (GSA) has recommended that the agency consider barring Sprint from competing for new federal government contracts, a disclosure that came just days after the GSA suspended WorldCom's eligibility for additional contracts [QuickLink 40319].

The Sprint case stems from a \$2.6 million overcharge that the company made on a tele-

communications services contract with the Department of Justice. A Sprint spokesman called the GSA inspector general's recommendation "unprecedented and totally without merit" and said the overcharge was the result of an inadvertent billing error.

Equating Sprint's error to the accounting scandal at WorldCom is "outrageous," the spokesman said. He added that Sprint had agreed to pay the DOJ \$5.2 million, twice the amount of the overcharge.

Jeff Kagan, an independent analyst in Atlanta, said the latest developments add to the confusion for IT managers who are weighing network services deals with the major telecommunications carriers. "With so many charges and countercharges, customers don't know the truth now," Kagan said. He advised corporate users to "sit back and wait for the situation to sort itself out," if they can hold off on signing new contracts.

The judge's ruling on the

settlement deal with the SEC was a step forward for WorldCom, which is now operating under its MCI brand name. The settlement allows a civil penalty of \$2.25 billion that was levied against MCI to be satisfied by a \$500 million cash payment and the issuance of \$250 million worth of stock to the company's shareholders and bondholders when it

emerges from Chapter 11 bankruptcy protection.

But MCI still has the GSA's new contract-suspension and a federal investigation of its call-routing practices hanging over it. The investigation was spurred by complaints from competitors that MCI has avoided paying them millions of dollars in network access fees by illegally routing calls.

MCI said an analysis done by an outside law firm showed that it has met all legal and regulatory call-routing requirements. The claims to the contrary by AT&T Corp. and other rivals are "a misuse of the bankruptcy process," MCI added.

AT&T shot back in a new legal filing of its own, characterizing MCI's contention that it was simply looking for the lowest-cost routing options as deceptive. "We're talking about the difference between shopping for bargains and shopping with somebody else's credit card," said James Cicconi, AT&T's chief counsel. ▀

KEY DEVELOPMENTS

MCI

■ A bankruptcy court judge approved the proposed settlement of fraud charges between MCI and the SEC.

■ MCI said claims by rivals that it had engaged in an illegal call-routing scheme are "demonstrably false."

Sprint

■ Sprint disclosed that GSA officials are weighing a possible move to bar it from new government contracts.

Correction

In a box profiling Huntington Bancshares Inc. that was included with the Aug. 4 Management section, the feature "Breaking the Record," the bank holding company's 2002 sales total was incorrect. The correct figure is \$2.2 billion.

BRIEFS

Cisco's 4Q Profit Up, Sales Down

Cisco Systems Inc. reported a fourth-quarter profit of \$982 million, up 27% from \$772 million a year ago. But revenue in the fourth quarter, which ended July 26, fell 2% year-over-year, dropping from \$4.8 billion to \$4.7 billion. Nevertheless, Cisco CEO John Chambers said that he is "seeing some very early signs that . . . could be interpreted as cautiously optimistic."

Novell Acquires Linux Developer

Novell Inc. said it has acquired Ximian Inc., a Boston-based developer of Linux desktop applications and systems management software. The cost of the deal, which is part of a plan by Novell to increase its focus on Linux, wasn't disclosed. Novell also said it will ship a full Linux-based version of its GroupWise messaging software by mid-2004.

Judge Stays Ban on BlackBerry Sales

A U.S. District Court judge in Virginia issued an injunction barring Research In Motion Ltd. (RIM) from selling its BlackBerry handheld devices in the U.S. but then stayed the ban pending an appeal. The injunction was sought by Arlington, Va.-based NTP Inc., which last November won a jury decision that Waterloo, Ontario-based RIM had infringed on U.S. patents held by NTP.

Short Takes

At a meeting with financial analysts in New York, **EMC CORP.** said it's on track to be profitable in both the third and fourth quarters. The storage vendor also forecast year-over-year revenue growth in the midteens for those two quarters. . . . **STORAGE TECHNOLOGY CORP.** in Louisville, Colo., cut the price of its D-Series disk storage subsystems by up to 30%.

Linux Proponents Strike Back at SCO

IBM, Red Hat file separate lawsuits

BY TODD R. WEISS
SAN FRANCISCO

IBM AND RED HAT INC. last week fired back at The SCO Group Inc. over its campaign against Linux vendors and users, filing separate lawsuits aimed at thwarting SCO's efforts to force companies to license its Unixware technology.

In response, SCO reiterated its claim that Linux is an unauthorized derivative of Unix and said it will continue with its bid to require corporate users of the open-source operating system to pay licensing fees. Doing so "is the best and

clearest course for customers to minimize Linux problems," Lindon, Utah-based SCO said.

But some users at the Linux-World Conference & Expo here applauded the legal maneuver by Raleigh, N.C.-based Red Hat, which was followed later in the week by IBM's filing of a patent-infringement countersuit against SCO.

"It's good what Red Hat is doing," said Jeffrey Baum, a systems administrator at San Francisco-based Banc of America Securities LLC. "IBM and everyone else should join forces. They need to fight these guys tooth and nail [to stop] SCO's illegitimate attempt to hold people hostage." Banc of America Securities uses Linux on firewalls, e-mail

and file transfer protocol servers, as well as systems running the open-source MySQL database.

George Weiss, an analyst at Gartner Inc., said Linux backers need to come forward more forcefully to counter the blows SCO has been dishing out.

The actions taken by Red Hat and IBM may help make IT managers more confident about the future prospects of Linux, said Bill Claybrook, an analyst at Aberdeen Group Inc. in Boston. "It gives users the impression that companies are going to fight back," he added.

IBM, which was sued by SCO in March for allegedly breaching its Unix licensing contract, claimed in its countersuit that SCO has infringed on four patents held by IBM

and doesn't have grounds to sue companies over their use of Linux. Red Hat filed a series of complaints charging SCO with unfair competition, trade libel and other offenses.

An IT architect at a U.S.-based manufacturing company, who asked that he not be identified, said that Red Hat's effort to stop SCO's public attacks on Linux is "not going to add any comfort" for users like him. However, his company doesn't plan to put its use of Linux on hold, he said.

Even if SCO prevails in its effort to extract license fees from corporate users, Linux will still be the right choice compared with using more expensive operating systems, the architect added. "If we end up having to pay [a fee], depending on what it is, we're still saving money," he said. ▀

READ MORE ONLINE

For full coverage of the SCO/Linux controversy, go to our Web site:

 **QuickLink a3260**
www.computerworld.com

Continued from page 1

OS/2 Migration

enable customers to perform online transactions such as purchasing sports and concert tickets, experts said.

David Kerr, director of industry solutions development in IBM's WebSphere division, argued against installing Windows on bank teller workstations, electronic bank kiosks and ATMs, claiming that it's a proprietary approach that stifles competition.

"Banks, being frugal with cash, would prefer to purchase from a competitive marketplace so they don't get tied to a certain vendor. That certain company has demonstrated the pricing power it has by [suddenly] changing its licensing model before," Kerr said, referring to Microsoft Corp.

"I'm not saying this because I don't want Microsoft to be successful," he said. "We don't believe a proprietary product is in the best long-term interest of our customers."

Kerr said IBM customers who choose Linux over Windows as a replacement for OS/2 will have functionality that's comparable to that of Windows-based systems. He noted that Sun Microsystems Inc.'s Java 2 Enterprise Edition can be used to integrate Linux systems with existing back-end systems.

Dan Vermeire, chief technology officer at Huntington Bancshares Inc. in Columbus,

Ohio, said he's keeping an open mind while seeking requests for proposals to replace or upgrade approximately 900 ATMs. But he expects to deploy Windows. "Linux does have a lot of attractions. Price, flexibility, the support IBM and other Tier 1 providers are giving to it make it a serious contender," Vermeire said. But in branch banking, what matters is the operating system ATMs run on, he noted.

The two largest ATM vendors — Dayton, Ohio-based NCR Corp. and North Canton, Ohio-based Diebold Inc. — have both adopted Windows as their OS/2 migration paths.

"Financial institutions that buy ATMs have indicated Windows is the direction they'd like us to go, and in fact our competitors are all on Windows," said Phil Kasper, assistant vice president for marketing at NCR.

Kasper said NCR is making a "drastic" changeover to Windows this year and will completely phase out OS/2 by 2005. Keith Lewis, senior marketing

manager at Diebold, said his company still installs OS/2. He couldn't say when Diebold would be able to completely move off the operating system.

OS/2 was adopted widely in the financial services sector early on because of its reputation for dependability. And banks are traditionally squeamish about moving off of any system because of concerns about losing customer data.

"It's very reliable, and you want it to be reliable and stable. OS/2 is doing what we want," said Ron Ferri, a technology relationship consultant at FleetBoston Financial Corp. "You could run with that for a while, until vendors moved off it."

Ferri said that as part of a pilot program, Fleet has replaced about 100 out of 3,400 ATMs that have been running OS/2. The Windows-enabled ATMs have high-bandwidth links to back-end servers to provide customers who use Fleet's online banking service with the ability to pay bills using Web-enabled ATMs, he said. ▀

Farewell, OS/2

Retirement of OS/2-based ATMs is being spurred by:

- IBM's decision to drop support of OS/2 in 2006.
- Requirements for machine upgrades from single Data Encryption Standard (DES) to triple DES.
- The Americans with Disabilities Act, which requires audio assistance on machines.
- The Check Clearing for the 21st Century Act, also known as Check 21, which allows checks to be imaged upon deposit.

Straight-Through Processing Needs Jump-start, Panel Says

Lack of deadline and clear ROI stalls efforts to fully automate stock trade processing

BY LUCAS MEARIAN

A panel of brokerage officials last week said that straight-through processing (STP) initiatives have lost a sense of urgency at many financial services firms because of the lack of a compliance deadline and the difficulty of convincing corporate executives that the systems will yield a return on investment.

The panelists who took part in the discussion, which was hosted by the Securities Industry Association (SIA) in New York, added that efforts need to be made to rejuvenate enthusiasm for automating the end-to-end processing of stock trades via direct connections between the back-end systems at different brokerages.

Some of the front-end trading process is still handled via phone and fax, and trade settlement systems still rely on batch processing. Until July 2002, the SIA was pushing for a mid-2005 deadline for switching to next-day settlement of all trades, a mandate that helped spur the adoption of STP technology. But the trade group then dropped the deadline [QuickLink 31538] and decided to focus solely on STP.

Without the push toward so-called T+1 settlements, though, the SIA is in the position of having to sell STP on the basis of its potential efficiencies and cost savings, said John Panchery, an SIA vice president.

Some financial services firms are skeptical that central trade matching, a key component of STP, will ever become a reality, he said. The Global Straight Through Processing Association in Zurich, one of two organizations that were developing central trade-matching engines, folded late last year. Only Boston-based

Omgeo LLC remains as a vendor of matching technology.

David Furlonger, an analyst at Gartner Inc., agreed that there's a "degree of cynicism"

about STP among brokerage executives. The lack of a T+1 deadline has caused some com-

panies to pause STP projects, Furlonger said, adding that the best way to jump-start such efforts is to show how they can produce a solid ROI.

But the middleware needed to support STP isn't cheap,

noted Tim Lind, an analyst at TowerGroup in Needham, Mass. "If we wait to base all these decisions on cold, hard numbers, we're going to be waiting a long time," he said.

The number of investment management firms using Omgeo's trade-matching engine has grown from 19 a year ago to 63 now, said Lee Cutone, the company's managing director of industry relations. That has resulted in more same-day trade settlements between firms and indicates a continued interest in STP, he said.

But Sanjay Vatsa, first vice president of operations for global business strategies and solutions at Merrill Lynch &

FINANCIAL SERVICES IT

Straight-Through Views

Findings from a survey of financial services firms about STP include the following:

- Two-thirds said they have launched at least one STP initiative or plan to do so by year's end.
- 49% use direct electronic links to communicate stock trade orders to other companies.
- Nearly 40% have to manually enter data into their systems at least twice for the same transaction.
- 42% of the Buy and Sell transactions processed by the respondents are still paper-based.

Base: Executives at 184 financial services firms worldwide who were surveyed in April and May.

SOURCE: GARTNER INC., STAMFORD, CONN., AND THE SECURITIES INDUSTRY ASSOCIATION, NEW YORK

Co.'s investment division, said banks that act as custodians by holding stock and bond certificates need to be convinced to set up the same kind of STP-capable systems that brokerages are being asked to install.

Tom Quinn, chairman of the SIA's business practices and matching-implementation sub-

committee, said that no matter where a company is on the technology curve, "there's only certain things you're able to do unilaterally." Automated processes for order entry, stock-price comparison, and trade affirmation and confirmation need to be rolled out industrywide, he said. ▀

Banking Web Sites Show Big Gaps in Performance

BY LUCAS MEARIAN

Keynote Systems Inc. last week said that an online performance showdown it conducted among eight top U.S. banks over a two-week period revealed a wide disparity in the speed and reliability of the monitored Web sites.

The average time it took to complete an account-balance-check transaction on the eight sites varied on a weekly basis from 8.16 seconds to more than 23 seconds, said San Mateo, Calif.-based Keynote (see

chart). The company added that the success rate for completing the transaction ranged from a high of 99.91% to a low of just 89.07%.

The performance data represents the first two weeks' worth of results from an online banking transaction-monitoring service that Keynote announced in May. Chase Manhattan Bank USA and Wells Fargo & Co. had the top two response times each week, while Washington Mutual Inc. and Bank of America

Corp. brought up the rear, according to Keynote's automated measurements from 10 cities. Washington Mutual and Bank of America also occupied the last spots in terms of availability, Keynote said.

"We subscribe to a variety of monitoring services, and our ranking varies on each report," said Angela Clegg, vice president of the Technology Solutions group at Seattle-based Washington Mutual. "We're working diligently to optimize the performance of our Web site."

Questions Ratings

A spokeswoman for Charlotte, N.C.-based Bank of America said Keystone's ratings are "not consistent with our internal data or what we've seen in [other] external reports." She cited a performance-tracking study done by Waltham, Mass.-based Gomez Inc. that gave Bank of America the top response-time rating among banks for the period from July 19 to Aug. 1.

Keynote measured Web site response times and transaction completion rates during the weeks of July 21 and July 28, after opening an online banking account at each insti-

tution. The company said it monitored how long it took to access the banks' home pages, log into the accounts, check their balances and log out.

Brad Adrian, an analyst at Gartner Inc. in Stamford, Conn., said Keynote appears to have done a good job of factoring out exterior telecommunications network issues and focusing on internal Web site performance. He noted that online transaction speeds can be greatly affected by how well systems and databases are integrated. "The bigger the bank is, the more difficult it can be to tie these systems together in a good way," Adrian said.

Poor online performance can hamper customer retention efforts as well as attempts by banks to reduce costs, Adrian said. "The worst thing is for a customer to pick up a phone and ask if a transaction went through," he said.

Keynote analyst Roopak Patel said end-user authorization and data-encryption methods can also cause slowdowns in response times on Web sites. Heavy-duty approaches to authorization and encryption are "a benefit in terms of security, but not in terms of performance," Patel said. ▀

E-banking Weekly Index Report

RANK	SITE	PERFORMANCE*	
		8.16	8.29
1	Chase		
2	Wells Fargo	8.58	9.48
3	SunTrust	11.85	11.64
4	Wachovia	12.11	12.38
5	First Bank	13.16	13.33
6	US Bank	14.04	14.07
7	Bank of America	17.49	17.59
8	Washington Mutual	23.09	23.44

*Performance times are in seconds

Base: Average response times measured hourly, Monday through Sunday, 8 am to midnight EDT.

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Vendors Push File Validation Plan as IT Security Measure

Database will let users check integrity of files in commercial software

BY JAIKUMAR VIJAYAN

A group of vendors led by Tripwire Inc. last week announced plans to develop a database that IT managers could use to verify the authenticity and integrity of the files built into packaged software.

Hewlett-Packard Co., IBM, RSA Security Inc., InstallShield Software Corp. and Sun Microsystems Inc. are also involved in the File Signature Database (FSDB) effort. The repository will store metadata about individual files created by each of the vendors, such as the file's name, a "born-on" date and its digital hash values.

Corporate users then can check the software running on their systems against the "good file" information contained in the FSDB to make sure that files haven't been improperly modified or corrupted by viruses, said Wyatt Starnes, president and CEO of

FSDB Access Options

■ A Web service supporting the database will be made available via the Internet in the first half of next year.

■ Hardware appliances that will let users self-populate and host relevant file metadata internally are also due in 2004.

Portland, Ore.-based Tripwire.

Although some software from vendors like Sun, IBM and Microsoft Corp. lets users verify the integrity of files, there currently is no common way for users to do so across multivendor applications, Starnes said.

The FSDB plan sounds like "a great initiative," said Ken Tyminski, chief information security officer at Prudential Financial in Newark, N.J. "It will give people the ability to ensure the code they have is really the right code," he noted. "If you think something is not at the right level or has been altered, you can look it up."

Doing that now involves going to multiple sources to get the correct file

information, Tyminski said. He added that he hopes more vendors join the FSDB initiative to further simplify the verification process for users.

Validating the authenticity of files could also be helpful from a regulatory compliance standpoint, said John Freeman, a senior process control systems engineer at Pittsburgh-based Bayer Corp., the U.S. subsidiary of chemicals and pharmaceuticals maker Bayer AG.

"I'm working in an FDA-regulated environment where we're required to maintain change control on all our software systems that are used in the production of [drugs]," Freeman said. "It can be a pretty large job doing that. This tool will help simplify and streamline that process."

The FSDB currently is populated with more than 11 million file signatures from the participating vendors. Each charter member will add new file information to the database when software products are released or updated, according to Tripwire.

The initiative is open to all software vendors, and Tripwire said the database will be accessible to any users with legitimately licensed applications. In addition, the FSDB will be made available to government and law enforcement agencies for potential use in cybercrime investigations. ■

IT Departments Face a Lack of Project Management Know-how

BY THOMAS HOFFMAN

IT SKILLS

More than 75% of 219 IT executives interviewed earlier this year by Meta Group Inc. indicated that a lack of in-house project management skills is a major workforce issue for them. But relatively few companies offer formal IT project management training, according to a Meta report.

The lack of experienced project managers is so acute, said analysts from Stamford, Conn.-based Meta and other consulting firms, that they're waiting to see whether IT-intensive regulatory compliance efforts, such as meeting the mandates of the Sarbanes-Oxley and USA Patriot acts, will lead to a resurgence of training efforts.

Margo Visitacion, an analyst at Forrester Research Inc. in Cambridge, Mass., said Meta's findings mesh with her own research. "A lot of unofficial training is going on where people take on the role of project manager," Visitacion said. But, she added, "the only

time there's been a dedicated effort for project management training was Y2k, and once that was completed, the money went somewhere else."

Providing consistent project management training to a technically oriented staff can be "a challenge," said Mark Reilley, an IT project manager at the Corporation for Public Broadcasting (CPB) in Washington. He is one of six IT staffers who support 125 users at the nonprofit company.

That setup "works well on a day-to-day operational basis," Reilley said. But when the CPB needs to install a new system or make major technology enhancements, "we tend to struggle," he added. The CPB can't afford to assign a dedicated project manager to each IT initiative and instead relies on a system "owner," meaning an IT staffer, to oversee the work.

Reilley said some IT technicians don't have all the basic skills needed to coordinate projects, but the CPB offers them training when possible. In addition, Reilley mentors staffers during the analysis phase of projects and helps them outline an overall plan.

One of the reasons why many companies lack project management capabilities is that they tend to hire IT professionals with similar skills, said Martin Colburn, chief technology officer at the National Association of Securities Dealers Inc. in Rockville, Md.

To combat that, he said, IT managers should develop a matrix of the primary and backup skills they need and then assess their strengths and weaknesses "to determine where to adjust."

Meta's report, which was issued last month, said that less than 15% of companies polled informally have IT project management training programs in place. The poll was done separately from the report that identified project management shortcomings as a key issue. ■

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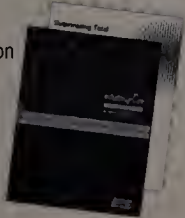
77%

of IT managers cited a lack of internal project management skills as an important workforce issue this year.

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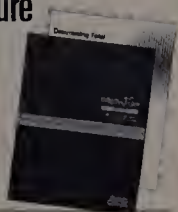
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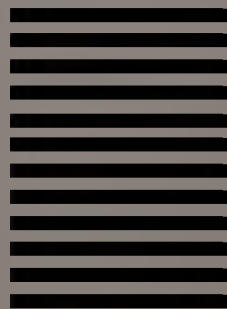
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by Russell Senesac
InfraStruXure Product Manager

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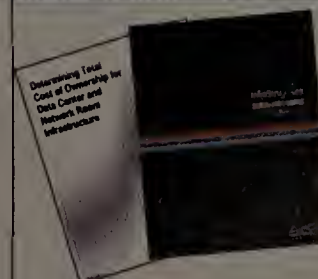
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MARYFRAN JOHNSON

Balancing the Buzz

IF IT WERE INDUSTRY BUZZ instead of pride that goeth before a fall, Linux would be stretched out on the pavement right now with a bandage on its beak. That's how deafening the media noise was last week out of the LinuxWorld conference in San Francisco.

Figuring out how much of it matters to corporate IT will take a bit of sorting out, of course — particularly with the legal cloud from SCO's intellectual property lawsuit looming over Linux's future.

It was welcome news last week when Linux vendor Red Hat and IBM each counterattacked. Red Hat asked for a ruling on SCO's copyright infringement claims (see Frank Hayes' take on that, page 50), while IBM accused SCO of violating IBM patents.

But lawyers and legal land mines aside, the momentum around the world's fastest-growing operating system has become a force of nature. Consider just a few highlights from LinuxWorld and their potential impact on corporate IT:

- All of the major vendors, even Linux foot-dragger Sun Microsystems, lined up to make speeches about and roll out products for the penguin's followers. Beyond the major server vendors, some heavy hitters in the systems management market also showed up bearing new wares (Veritas, Computer Associates and BMC, to name a few). With Linux making up 26% of all server operating systems sold last year (says research firm IDC), the need for better management tools and a wider applications portfolio is already acute.

Impact on corporate IT? Lots of choices, lots of support, lots of competitive pricing — exactly what corporate customers like to see.

- Dell and the National Center for Supercomputing Applications announced a project to build a Linux

cluster with 1,450 servers that's able to perform up to 17.7 trillion calculations per second.

Impact? Negligible. High gee-whiz factor, but no near-term benefits.

- IBM and SuSE Linux cleared a security hurdle by passing a certification required by the U.S. Department of Defense.

Impact? Swell show-off factor for Linux, since

competitors have been sneering that it would never get to this security level. Generally good news for security-conscious IT shops (which means everybody).

Yet in the slew of announcements last week about Linux, there was one

you didn't hear about (but can read about on our front page today). It's a story about how IBM has been quietly informing its banking customers about the sunset of all OS/2 support by 2006 — and directing them to Linux as the favored migration path.

The vast numbers of automated teller machines from coast to coast mostly run OS/2 under the covers today, and Big Blue's fondest hope is to keep those longtime customers out of Microsoft's grasp. By the mid-1990s, OS/2 users were at least 6 million strong and as fiercely devoted to IBM's alternative to Windows as, well, open-source users are to Linux today. But Microsoft has leveraged its monopoly dominance on the desktop into a significantly stronger position in the enterprise now, and the banks won't be so willingly guided by IBM's hand this time. Should be quite the showdown.

But what's more significant here is the way IBM is positioning Linux as a bridge from the proprietary past to the open-source future. Novell has already made Linux the chosen path for its migrating NetWare customer base, and Hewlett-Packard is marching in the same direction.

Now it's up to corporate IT to balance the buzz against real-world results. ▀



MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran.johnson@computerworld.com.

PIMM FOX

Power in The Field

WE THINK of salespeople as mobile, with laptops, cell phones and PDAs. But how far into the field does your CRM system reach?

Your salespeople should be able to order up the rich diet of data inside your mainframe applications or taste the pleasure of instant entry and access to information from the field.

A sales call is more powerful when a well-trained salesperson uses a handheld device to access pertinent data from CRM applications.

These devices can give sales staffers access to an IT feast. And the cost for new mobile CRM technology (about \$1,200 to \$1,500 per seat, plus annual maintenance costs and server licenses) is low enough for a company like Wilmington, Mass.-based UniFirst Corp. to run a substantial pilot program.

With 400 salespeople, 90 sales managers and 145 locations in the U.S. and Canada, UniFirst is the third-largest uniform maker in the U.S. It's moving from a form-based system that's updated once a month to a responsive CRM system that's updated daily to bolster sales calls, assist follow-ups and get technology to people who often shun the stuff.

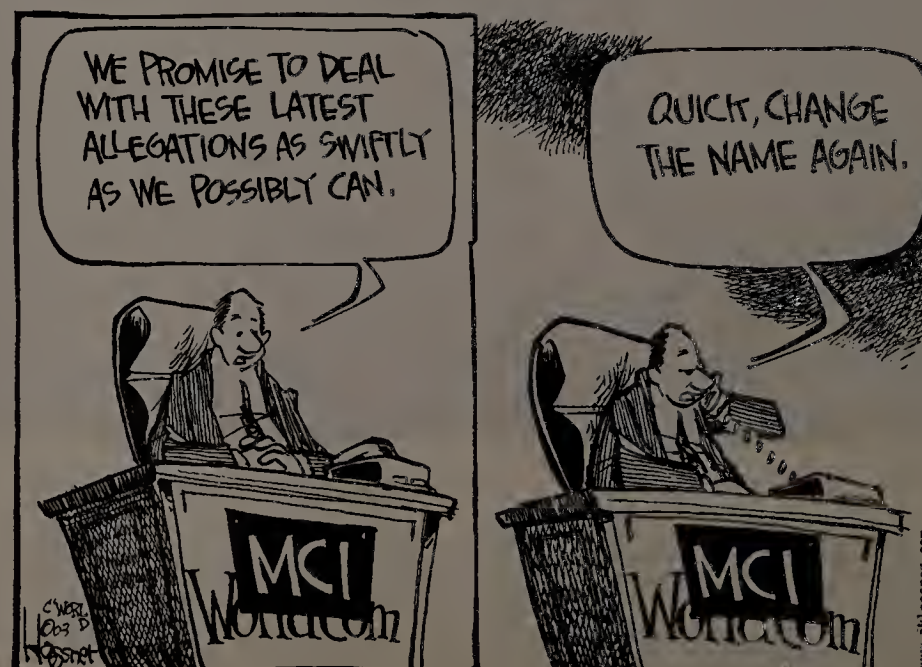
Now, instead of a monthly green-bar paper printout that probably got left in the car, sales reps can see the latest information with the CRM tool. UniFirst uses software from SalesLogix, a division of Best Software Inc. in Scottsdale, Ariz.

UniFirst worked with Vaultus Mobile Technologies Inc. in New York to get a Java-based client linked to an application server that syncs with the corporate sales database. As a result, UniFirst has lower costs. Gone: \$55,000 a year for paper, \$40,000 for planners and calendars, \$100,000 for FedEx service. And, of course, the company no longer needs data entry people.

And this is before the sales rep even meets with the client. At that point, there are more opportunities to save



PIMM FOX is a free writer in Santa Barbara. Call: Contact: pimmfox@pacbell.net.



money — and to make more money.

The UniFirst test has shown a reduction in past-due invoices. Moreover, managers get their hands on data they can use to create calendars, prioritize accounts and help the reps sell.

The daily downloads take three minutes on a link established via a toll-free number. Sales reps in six locations are testing the system on Jornada and iPaq devices. The pilot will expand to all 400 reps this fall.

You could also opt to use Tablet PCs. They offer far more screen space — and power — than PDAs. Trexis Inc. in Valley Cottage, N.Y., was able to develop a CRM system for Tablet PCs using SalesLogix's ActiveX controls to develop forms, bringing the CRM application to the Tablet PC. Sure, Tablet PCs cost more than PDAs (\$2,000 vs. \$1,300), but if you want to use the device for more than one application, the power will be handy.

Like good corporate citizens, you've cut IT costs. Now it's time to help grow revenue. That's more difficult, but mobile CRM might help. ▀

DAVID MOSCHELLA Outsourcing Is Good

IN THE 1980S, when many manufacturers were closing U.S. plants and exporting jobs overseas, how did you feel? Did you ever think that, as painful as it all was, the resulting economic, cultural and personal upheaval simply wasn't your problem, that this was something that happened to other, older industries, and that it was really just the normal forces of capitalism at work?

If you did, you were not alone. As long as it was automobile, textile and even computer hardware makers that had to change their ways, software and services professionals had the luxury of focusing on the long-term benefits of globalization. Over the past 20 years, it's been relatively easy to argue that increased market competition and improved business efficiencies eventually result in a net economic gain for both the U.S. and the world. Given time, this is what typically happens.

But it will be interesting to see how well these attitudes hold up, now that globalization is challenging the U.S. software and services industry itself. While offshore IT projects are certain-

ly not new, business interest in overseas software development, call centers and other IT services is accelerating. Predictably, given today's depressed U.S. IT job market, shifting work abroad has become a controversial media issue; witness the recent *New York Times* front-page story featuring a leaked audiotape of an internal IBM discussion about offshore staffing.

How should the IT community react to this important trend? First, we shouldn't be outraged or surprised. The conventional wisdom that our increasingly services-based economy will be shielded from globalization has always been only half-true at best. Offshore workers can't fix your car, but many IT services are vulnerable to competition. Indeed, in many ways, exporting bit-based IT work is actually much easier than exporting work in industries that need to



DAVID MOSCHELLA's latest book is *Customer-Driven IT: How Users Are Shaping Technology Industry Growth*. Contact him at dmoschella@earthlink.net.

mentally silly. Multinational companies are supposed to adopt a country-neutral, global perspective. For these firms, lowering software development and customer support costs are perfectly reasonable business objectives.

Thus, no matter how heated the debates over U.S. job losses, wage cuts and even national security risks, companies will do what they believe is in their interest. The challenge for the

worry about physical supply chains, inventories and related distribution costs.

Aside from the aesthetics of the name, software development could just as easily be relabeled as software manufacturing, and increasingly it will be treated as such. The amount of software that the world needs is virtually limitless, and the idea that this production will remain the special preserve of highly paid U.S. workers is funda-

U.S. IT community is to continue to demonstrate that hiring American software and services talent is a sound business decision. Fortunately, this shouldn't be that hard. The potential for software innovation is as great as ever, and the market will be much bigger than any one nation can handle.

The bottom line is that no workers have benefited more from globalization than IT professionals. It's what most of our giant corporate networks were designed to support. To protest that globalization is now harming U.S. IT workers is essentially hypocritical and largely pointless. Global competition doesn't come with guarantees, but its long-term results are hard to argue with. Software globalization will, on balance, be a good thing, with many unforeseen benefits. We should do our best to accept it. ▀

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READERS' LETTERS

Flexibility Key to Managing Projects

TOM POHLMANN, the author of the Forrester Research report "How Companies Govern Their IT Spending," cites a high rate of failure in projects ["Value of Project Management Offices Questioned," QuickLink 39998]. At the same time, he points out the "process cop" mentality that's present in too many project management offices (PMOs). Rather than ensuring that projects run well, the PMOs get bogged down in creating and monitoring processes.

My hunch is that these processes are rote activities, put in place to satisfy some model or standard. As a process improvement professional, I have been frustrated when working with executives who issue mandates to "be CMM Level 3" or "become ISO-certified," often with an arbitrary deadline. They then brush off their hands and wait for a miracle to happen. After all, the PMOs will know what to do.

But it's no surprise that project managers who are expected to do someone else's job would respond with a minimalist, policing interpretation. They will do as little as possible until the entire initiative

goes away, or they might even sabotage the project. PMOs could benefit from an independent entity that lets them and executive management know how things are working.

This entity should be savvy in project management, business management and technical domains. You don't want someone in this role who is only qualified to report, "You missed Step 25. Don't do it again or I'll tell on you." I once had a client who required anyone seeking promotion to management to hold this process and product assurance role for at least one year, and it definitely raised the caliber of personnel applying for the positions. This in turn increased the value of this function.

What difference would these approaches make on the situation reported by Pohlmann? For one thing, processes would become tools to help the PMOs ensure that project objectives are met. Outcomes from using or waiving these processes would be interpreted based on risks and benefits, not merely as the ability to check a box on a compliance list. Reporting of these outcomes would occur in a blame-free environment and would allow data to flow to the PMOs, rather than forcing them to

go find it. This would allow the PMOs to manage projects, not play process cop.

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What Makes Projects Run Late

I FOUND THE ARTICLE "Value of Project Management Offices Questioned" to be interesting and thought-provoking. But I'm not sure you can assert that process impedes the overall delivery date of a project. It's my belief that repeatable processes improve the delivery rate. In my experience, projects are delivered late mostly because of poor estimates and delays in receiving authorization from senior management to complete a phase. As far as reports for senior management, it's up to those managers to determine their frequency, but they should factor the appropriate amount of reporting into the project budget.

John Reaves
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Bye-bye, Jobs

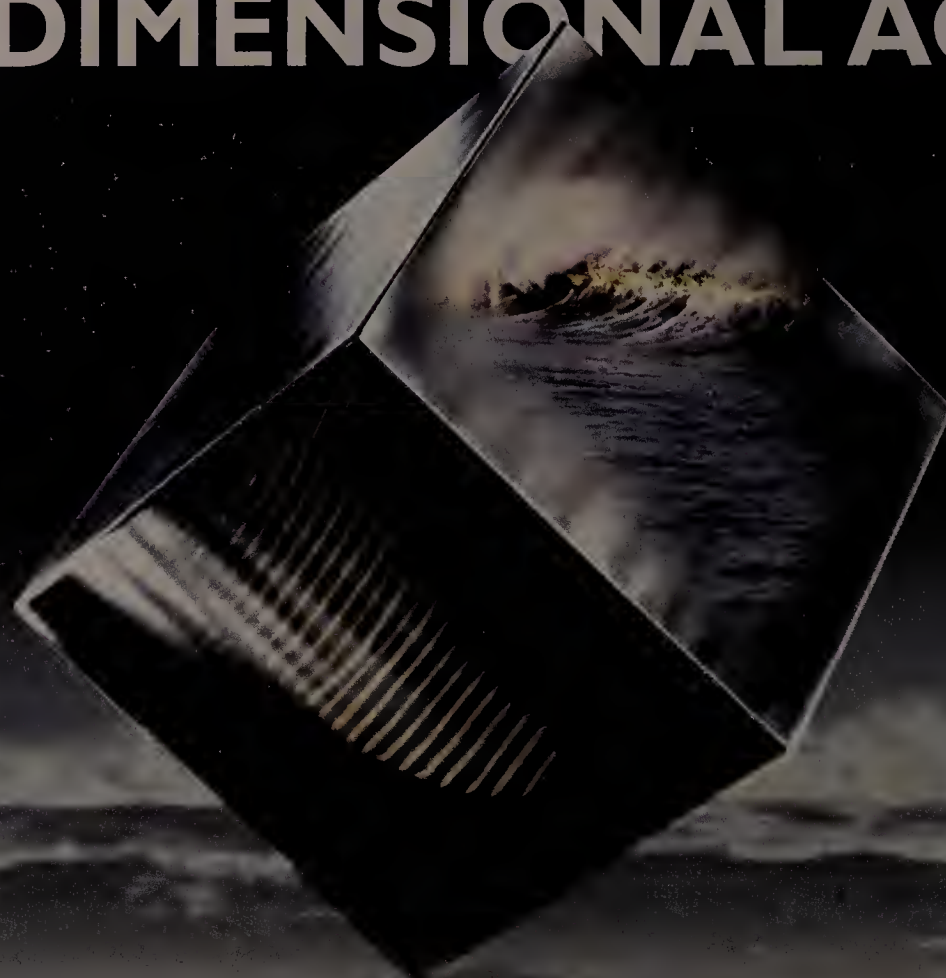
I SUSPECT offshore outsourcing will have a bigger impact than Gartner thinks ["Gartner Says 5% of Corporate IT Jobs Could Go Offshore by 2005," QuickLink 40344]. Once a company has started down the path of sending jobs overseas, what reason would it have for adding new jobs in the U.S.? If Gartner is correct about the percentage of jobs that will be sent overseas, then within 20 years there may not be any U.S. IT jobs as we know them. And we will also need to cut back on the number of colleges and universities offering computer science degrees.

David Williams
Irving, Texas

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Piecing Together the Data Picture

Data quality goes beyond mere data cleansing and transformation; it can make or break a CRM application and even make the difference in a company's survival. **Page 26**

QUICKSTUDY RosettaNet

This emerging set of XML-based standards is aimed at letting businesses align specific processes with those of trading partners. **Page 28**

CASE STUDY Averting an IT Collision

Faced with the need to streamline its IT infrastructure after an acquisition, Liberty Northwest turned to Web-to-host technology to bring its systems together. **Page 30**

IT Drives VOLKSWAGEN'S Autostadt

FIELD REPORT

Volkswagen's Autostadt shifts into systems

integration overdrive to wow theme-park visitors and hopefully convert them into buyers of Beetles and Bentleys. **By Julia King**

IN 1999, VOLKSWAGEN AG's top executives directed Chief Technology Officer Claus Hohmann and his IT team to design and build an IT infrastructure that would flawlessly support a unique and highly customer-centric automotive theme park. The idea was to create a spectacular and ever-changing marketing venue where visitors could experience state-of-the-art automotive technology. Buyers would pick up their new cars from one of the park's two gleaming 20-story, fully automated glass-and-steel towers (see photo, left).

The Autostadt, or "car city," which is near Wolfsburg, Germany, celebrates its third birthday this month and has attracted more than 6 million visitors. Some 6,000 per day have toured its car museum and six brand pavilions, which offer a variety of interactive and computerized exhibits and Web-based point-of-information (POI) terminals. They've dined in the park's restaurants

and bars and shopped in its stores, paying for goods and services with computerized stored-value cards issued upon arrival. Perhaps most important, 349,000 of Autostadt's visitors have taken delivery of new cars. This is the theme park's key success indicator, since its ultimate goal is to wow every person who comes through Autostadt to the point of buying a new car.

"We are not a normal corporation where we have a headquarters and a shop floor. We are producing adventures and values," says Hohmann, who came to the Autostadt from Volkswagen's Skoda Auto AS unit in the Czech Republic. To do that, he says, "we have had to combine different worlds." These include Volkswagen's mainframe-based factory systems, proprietary Unix-based

The Challenge: Design and build an IT infrastructure to support a unique automotive theme park and a new-car delivery center operating with 99.95% uptime at least 12 hours a day. Create Internet-based applications; integrate with existing mainframe systems.

Key Technologies: Vignette V6 Content Suite, Oracle® database; IBM MQSeries middleware and BEA Systems Tuxedo transaction monitor; Sun Microsystems servers running Solaris; Cisco networking gear.

The Cost: \$500 million. "Cheaper than *Matrix Reloaded*," says CIO Michal Bruna.

The Payoff: About 349,000 of Autostadt's visitors have left with new Volkswagen cars. Customer satisfaction ratings consistently exceed 98%. In three years, Autostadt has never lost any data or experienced any significant network or systems problems.

Volkswagen's Autostadt hosts more than 6,000 visitors a day. Point-of-information terminals (right) throughout the park are just one of the IT innovations geared toward providing visitors with ever-changing content.

systems that run the car towers, plus various packaged and proprietary Web-based applications written in Java for reservations, customer service and multimedia entertainment systems.

All of this information comes together at Autostadt over a three-tier information architecture called the Integrated Autostadt System (IAS). At its center is Vignette Corp.'s V6 Content Suite software, which functions as the Web-based window through which information about car deliveries, event bookings and daily ticketing, plus reservations for the Autostadt-owned Ritz-Carlton Hotel, is drawn together (see diagram below). The system presents information to Autostadt and Volkswagen employees based on their predefined roles.

"This provides optimized process support and covers all data protection," explains Bruna. The architecture also provides Internet and intranet services that let customers and employees access more general information.

Online interfaces link the Vignette server to a centralized Oracle8i database into which these various back-end systems funnel data. The interfaces use IBM's MQSeries middleware and BEA Systems Inc.'s Tuxedo transaction monitor. Until last month, the Oracle database ran on two Sun Enterprise 4500 database servers with Sun Cluster 2x software. But Autostadt swapped these out one recent night for Sun Fire 4800 servers running Solaris 9.0.

"The migration went so successfully and we were done so quickly that we

even had to wait for the first test users [to come in the next morning]," says CIO Michal Bruna.

Burning the midnight oil on changes and fixes is one of the key IT challenges as well as a point of pride at Autostadt. All software and hardware upgrades and other changes must take place after visiting hours. That means after 10 p.m., since the park is open seven days a week, 52 weeks a year, and all systems must operate at 99.95% reliability for at least 12 hours per day.

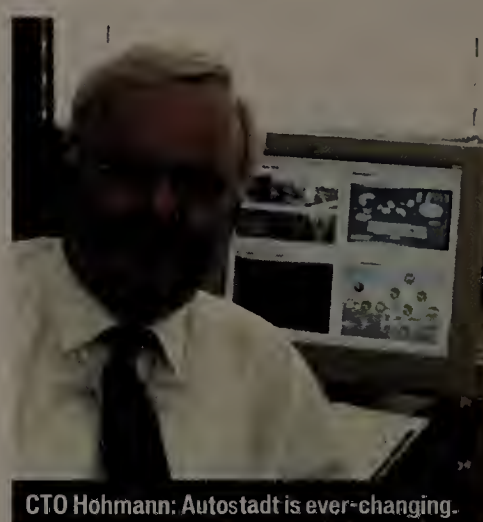
Preparing for the server swap involved synchronizing all transactions and having the new machines in place and tested so they could communicate with the network, explains Bruna. During the cutover, "there's no Internet, no IAS, the Sun environment is dead," Bruna says.

Swapping Servers

The good news is that, thanks to extensive training of in-house IT staff and plenty of hands-on practice, Autostadt has been able to cut loose all external vendor consultants and contractors who helped build the initial Autostadt IT architecture. Initially, 20 contractors from Gedas, a German systems integration firm partially owned by Volkswagen, helped develop and implement the systems.

What's more, Bruna says, because of the internal IT group's expertise, Autostadt has been able to downgrade service and support contracts with Sun and its other hardware providers.

On the software side, the Vignette



CTO Hohmann: Autostadt is ever-changing.

system functions as the digital heart and soul of the IAS and Autostadt as a whole. "Vignette is not a solution itself, but it is our development environment, our tool kit for making applications and an area in which we now have huge know-how," Bruna says.

He estimates that Autostadt has between 500 and 600 templates on its Vignette servers. The Vignette system has two components: the content management system, which runs on two Sun Netra T1 servers, and the content delivery system, which runs on four Sun 420 servers. The IT staff includes three full-time Vignette developers, who receive two to three weeks of advanced Vignette training each year.

Autostadt began using Vignette StoryServer Version 4.2 in June 2000. A key selling point was its use of templates to separate content and format as well as its overall ease of use. Vignette developers handle the design and associated back-end data calls and connections for all templates, which nontechnical users can then populate with changing Web page content.

One of the biggest integration challenges is negotiating the IAS's sophisticated security mechanisms "to pull all of the information I need to publish to the right people," says Vignette developer Uwe Hohlatz. To get production manufacturing information from Volkswagen's mainframe system, for example, the Autostadt uses RVS, a system to share files to authenticated users over a remote directory.

"The data structure of these files is known, so I can write a filter in TCL [Tool Command Language] to parse the files and store the results in our Oracle database. From this database, I have all the possibilities to publish the data to the channels that are needed because the Vignette system uses this database as the content database for its delivery applications," Hohlatz says.

The Autostadt's various channels include two completely new Web sites,

the POI terminals scattered throughout the park and an intranet.

The ability to separate content and format means that new Web pages can be produced quickly and easily, with a minimum of specialist skills. This in turn allows for more content contributors, which Hohmann notes is critical to Autostadt's mission of providing an ever-changing venue to Autostadt's physical and digital visitors.

Since its opening, Autostadt has migrated to Vignette V6 Content Suite, which uses a newer TCL interpreter and has several new and improved functions, including new services to build reports and the ability to dock onto a servlet engine such as Apache Software Foundation's Tomcat or BEA's WebLogic to deliver Java applications, according to Hohlatz. These small servlet applications, usually written in Java, enhance the display and delivery of Web pages.

The new Web sites include www.autostadt.de, where consumers can buy tickets, reserve a hotel room or learn more about the theme park and educational and entertainment events, and www.autosphere.autostadt.de, which features flash animations, films and music for visitors with a high-speed Integrated Services Digital Network or Asymmetric Digital Subscriber Line connection. Both sites are populated with content from the Vignette server and were completed by the three in-house Vignette developers, who worked on them full time for six months.

Guy Crease, an analyst at Boston-based Aberdeen Group Inc., says Autostadt has put a unique twist on content management by doing it in such a "strategic marketing fashion." He also describes Autostadt's "unified approach" to content management as "quite rare." Typically, Crease says, large organizations have multiple content management systems, with different business units, regional offices and country groups developing idiosyncratic sites internally and externally.

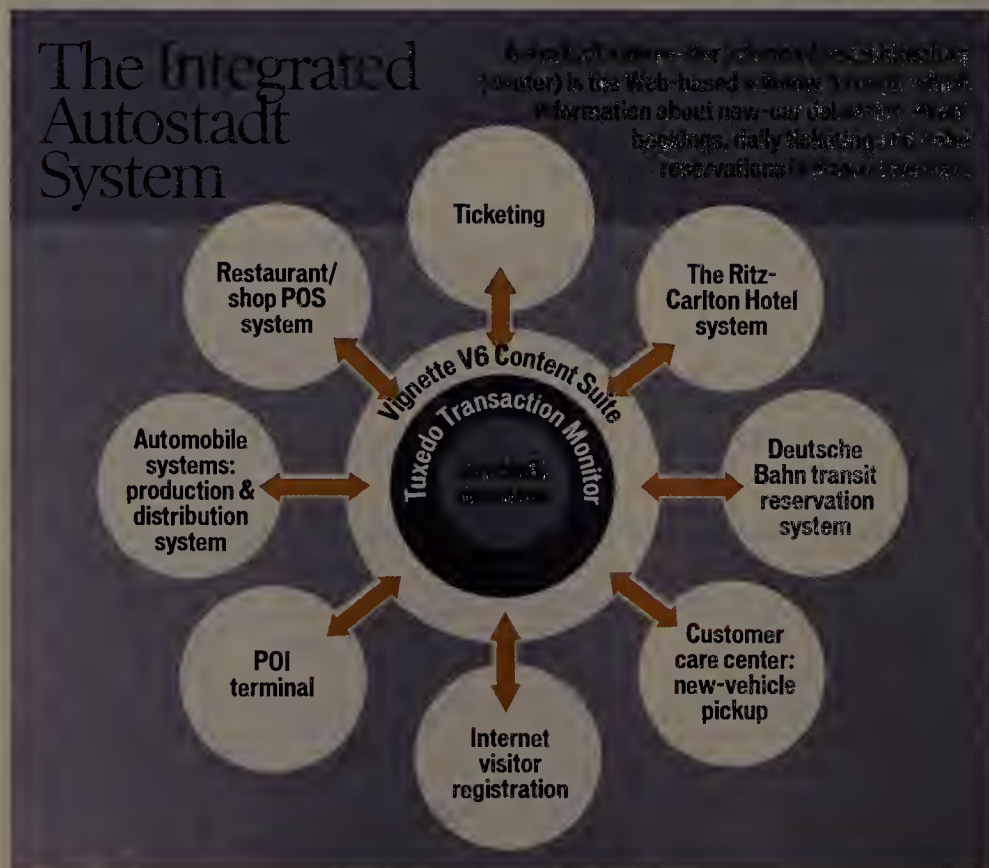
Such a reaction is in line with Autostadt's business goal, which is to stand out from the crowd by offering visitors a one-of-a-kind experience. "The danger here," says Hohmann, "would be becoming a normal corporate office."

WHEN IT EXPERTISE ISN'T ENOUGH

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DATA QUALITY
TRANSLATES INTO
COMPANIES HAVING
THE RIGHT INFOR-
MATION AT THE
RIGHT TIME TO
MAKE DECISIONS.

BY SAMI LAIS

Poor data quality can confuse your customers, undermine your applications or even put you out of business — and there's everything in the world you can do about it.

More than simple data-cleansing, which involves correcting a misspelled name or changing "Avenue" to "Street," a data quality initiative addresses more complex and subtle problems.

For example, one New York bank that had a 3% to 5% bad-debt ratio on its credit card operation acquired another bank, says Aaron Zornes, a San Francisco-based analyst at Meta Group Inc. "It turns out that the acquired bank had a 15% bad-debt ratio. The New York bank took over, and the bad debt nearly put them out of business," he says.

If the acquiring bank had had a data quality initiative to run large database-comparison jobs off-line, the problem could have been averted, says Zornes. Bank managers could have predicted the loan default rate by comparing the outstanding debt, incomes and even partial ZIP codes of the acquired bank's credit card customers against a historical database of similar customer profiles.

"They would have been able to tell that this company wasn't a good buy," Zornes says. "Enterprises cannot afford to wait on data quality efforts."

Data quality initiatives are critical to enterprise applications such as CRM and ERP systems, Zornes notes. And according to The Data Warehousing Institute in Seattle, data quality problems cost U.S. businesses more than \$600 billion per year.

"The basis of any CRM system is the integrity of the data," says Steve Deeb, vice president for CRM at Monster Worldwide Inc. in Maynard, Mass. "Any and all processes are driven by that data."



DAVID HOLLENBACH

In addition to business needs, there are now regulatory pressures to maintain better data, Zornes says. "If someone has bought a large amount of ammonia-based fertilizer, then rents a car," the U.S. Department of Homeland Security wants to know about it, he says. "And this isn't information you can wait months or even a week to find out."

The tools to improve data quality exist, says Zornes, but although "businesses give lip service to the need for data quality, too often they don't do anything about it."

James Eardley, a managing director of CRM at FleetBoston Financial Corp., agrees. "Data quality gets short shrift too often. It's not important until you need it," he says.

Although in dissimilar industries, FleetBoston and Monster both use CRM software from Siebel Systems Inc. in San Mateo, Calif., and faced similar data quality problems. Duplicate records in customer and contact databases meant one department didn't know what another was doing.

"What we were missing was a total picture of the customer relationship. We have multiple business sales forces following a single customer. It's hard enough to get one business unit's data clean. We now have 24," Eardley says.

"There's no consistency with how users enter customer and contact records," he continues. "Some people use upper- and lowercase; others use all uppercase."

PIECING TOGETHER THE DATA PICTURE

Today FleetBoston's system standardizes the data elements and does ZIP code lookups.

The company opted for data quality software from FirstLogic Inc. in La Crosse, Wis. Those tools, coupled with the Siebel software, "seemed to do exactly what we needed," Eardley says.

To prevent duplicate entries, when a user enters a record, the FirstLogic system generates a token, which it compares to others to see if the database has similar tokens. If it finds any, it shows them to the user to determine whether the record is a duplicate.

"We had to work a little bit to get the tokens to our liking, and then it worked fine," Eardley says. "We also run batch jobs monthly to identify and fix any duplicates." Any records that the system can't resolve go to the business side for review.

Monster Problem

Similar data inconsistencies undermined confidence in Monster's system, says Deeb. Duplicates and unidentified accounts in the Siebel system made it difficult to know which database to use for ordering or invoicing, he says. And the sales staff wasn't getting the support it needed.

Initially, Deeb says, "we didn't see a product that mapped directly into what we were doing." But after building its own address-matching application, the company found that it needed a more strategic tool and more sophisticated analysis than its in-house application could offer.

About a year and a half ago, Monster took another look at the field and chose the Trillium Siebel connector from Trillium Software, a division of Harte-Hanks Inc. in Billerica, Mass.

"When we were looking at the ROI, the ease with which the Trillium product could be integrated into our systems was attractive," Deeb says. "We leveraged the strength of the Trillium core product — such as the way name and address databases from around the world can be plugged in — and integrated it into our processes in a way that made sense to the way we do business."

Now, when a record is entered, the system evaluates in real time whether it's new or a modification of an existing record. The company also runs data quality checks in batches to ensure that duplicates aren't introduced when it incorporates a new mailing list into its existing database. They're also performed at regular intervals to minimize data degradation. In addition to the IT resources dedicated to maintaining data quality, business staffers

FOUR WAYS TO BUILD A MASTER FILE

- 1 Synchronized master.** Use middleware to synchronize data in its native store and create a logical master in real time. **Best for companies with low data velocity.**
- 2 Application-specific master.** Pick one operational application, such as CRM, to be the master. **Best for companies with data primarily in one application.**
- 3 Customer master overlay.** Use a third-party, application-agnostic overlay, a common choice of big banks and insurance companies. **Best for vertical industries, such as banking, insurance and travel.**
- 4 Data-warehouse-based master.** Create a data-store-like structure to straddle operational and analytical environments. The store holds recent, transaction-level data; the warehouse holds summaries and data analyses. **Best for companies with low operational data latency needs.**

SOURCE: META GROUP INC., STAMFORD, CONN.

are also assigned to monitor the system and resolve anomalies.

It's the essence of analytical CRM, Deeb says. "Real-time analysis to determine the right offer to the right customer at the right time in a predictable manner is driven by the quality of customer data supporting that analysis," he says.

But most companies believe that their data is cleaner and more accurate than it is, says Wayne Eckerson, The Data Warehousing Institute's education and research director. He cites as one example an insurance company that each month gets 2 million claims, each with 377 data elements. At an error rate of 0.1% for all claims data, that's more than 754,000 errors monthly, which

amounts to 9.04 million errors annually. If 10% of data elements are critical to its business decisions, the company each year must correct more than 1 million errors that could damage its ability to conduct business. Estimating the risk cost at \$10 per error, poor data quality costs the company \$10 million annually in erroneous payouts.

"It's bewildering," says Eckerson, "but almost half of all companies have no plan for managing data quality." Responsibility for data quality often rests with IT staffers, who make their decisions based on the tools available.

Data Quality Means Business

"First and foremost, data quality is a business issue," says Ted Friedman, an analyst at Gartner Inc. in Stamford, Conn. "But the solution is the proverbial three-legged stool: people, process and technology."

The first step in a data quality initiative is to analyze what the data is and how it's used, Friedman says.

GMAC Mortgage Corp. in Horsham, Pa., followed this measured course in its data quality initiative. When interest rates went into free-fall a year and a half ago, the first thing the company's CEO wanted employees to do "was cope with a 300% to 400% increase in daily business of people refinancing mortgages," says David Adams, GMAC's enterprise data access manager.

Tuning the Oracle database that supported application processing improved performance, he says, "but it also opened our eyes to the need to go further and address the quality of the data itself." And with GMAC beginning a major overhaul of its data warehouse — "actually, it was more a large tank of data than a data warehouse,"

says Adams — the timing was right to launch a data quality initiative.

"To compete on the other side of the refinancing boom, we were going to have to have better, cleaner data to get the accurate analyses that the CEO wanted and that we needed to make the most of our operation," he says.

Adams brought in a data quality consultant to explain to the executive council what the project would entail. Adams and his team researched the data quality tools, ran two pilots and then selected software from Ascential Software Corp. in Westboro, Mass. The Ascential product was more expensive and took more work to get going than some less sophisticated tools, he says. But Adams was sold on the software's heuristic logic, which let it adapt to GMAC's operation.

"The ETL [extract, transform and load] technology is pretty mature, and it works well," says Adams. "But it's the data quality and metadata stuff that's going to give you the great advances."

Physically merging databases would have required that every division agree on a single definition for each data element, which was "probably impossible," Adams says.

Instead, metadata resides in Ascential DataStage and links divisional databases at the logical level, with "pointers" indicating the source of the data. Each division's database remains inviolate.

Each division can decide what data can be shared and with whom, which is important for adhering to government regulations. Other tools couldn't deliver that granularity of control, says Adams.


The team installed the software in January and, working with the data warehousing team, went live in May with a relatively small application for new credit policy reporting. The first large data mart, to support all reporting for GMAC's wholesale operations, will go live Aug. 15.

"Information is a critical asset," says Meta's Zornes. "We need to change the way we think about it. It may sound like science fiction now, but in the future, companies will certify information the way we certify works of art and financial instruments, i.e., by assigning that information asset's value and origination." ▀

Lais is a Computerworld contributing writer in Takoma Park, Md.

HOW MUCH IS ENOUGH?

For more on gauging your data quality needs and matching them to the right tools, visit our Web site:

 **QuickLink 40427**
www.computerworld.com

FOUR ENEMIES OF DATA QUALITY

Denial. IT managers assume that old data will serve new uses without being re-engineered.

Deception. They assume that their new ERP or CRM software will solve the problem.

Deflection. They shift responsibility for data quality to someone else — users, IT, those doing data entry or the systems integrator implementing the new system.

Deferral. IT managers think they can put off fixing data quality until after the new system is implemented.

BY KYLE STEPHENSON AND JIM T. SULLIVAN
SOFTWARE EDITOR, WESTERN MEDIA

RosettaNet

DEFINITION

RosettaNet is an emerging set of standards based on XML that is aimed at letting businesses align specific processes with those of trading partners.

BY RUSSELL KAY

REMEMBER the promise of the paperless office? Computers communicating electronically with one another were going to replace the tons of paperwork that characterized business-to-business interaction: purchase orders, invoices, payments, confirmations, documentation — the list was nearly endless. Electronic document interchange (EDI) was going to be the savior of our systems and protector of our forests.

It didn't happen. EDI never met the challenges of connecting scores of proprietary and mission-critical applications. Now, a new successor is stepping up to the challenge.

RosettaNet is both a set of standards and a global consortium of more than 400 electronic component, IT and semiconductor manufacturing companies working to create, implement and promote open e-business process standards. Founded in 1998, RosettaNet aims to align specific business processes among trading partners by defining and standardizing up to 100 e-business transaction processes so that two companies' back-end systems can talk directly to each other.

RosettaNet takes its name from the Rosetta stone, which a soldier in Napoleon's army

discovered in Egypt in 1799. Since it contained parallel inscriptions in both Greek characters and Egyptian hieroglyphics, it provided a key to deciphering ancient Egyptian writing.

This modern electronic translator speaks the contemporary languages of computer interoperability — XML and SOAP — which should allow disparate systems and business processes from different organizations to understand and exchange data with one another.

Defining Processes

The consortium began its Herculean task by looking at supply chain processes. Members used business-process modeling to identify the elements of a working business process and

create a clearly defined model of current trading partner interfaces. After extensively researching every level of the supply chain, as well as analyzing misalignments and inefficiencies, they developed a set of generic, standardized processes that could serve as the basis for real-world business-to-business alignment.

These Partner Interface Processes (PIP) are specialized system-to-system, XML-based dialogues. Each PIP specification includes a business document and a detailed business process that includes interaction, data transmission,

security and error-handling requirements.

PIPs use two data dictionaries — one for business properties and another for technical properties — that help different companies define the same product in exactly the same way. The RosettaNet Implementation Framework defines an exchange protocol, and the Message Guidelines instruct implementers on how to encode individual PIPs into specific packages.

Such efforts at standardizing generic processes have been tried before and failed. RosettaNet, however, seems more carefully grounded in the real world, and its PIPs are tested by consortium members. After consortium partners have agreed through a voting process that a PIP meets industry needs, it is

then published on the RosettaNet Web site and is available for anyone to use.

PIPs fit into seven official clusters, or groups of core business processes, that represent the backbone of the trading B2B network. (There's also an eighth cluster for administrative purposes.) Each cluster is broken down into segments, which are cross-enterprise processes that involve more than one type of trading partner. Within each segment, individual PIPs are identified according to their place in the cluster hierarchy. Thus PIP 3A4 (request purchase order) is the fourth PIP in Cluster 3 (order management), Segment 3A (quote and order entry). Here are the clusters:

0. RosettaNet support: Provides administrative functionality.

1. Partner product and service review: Allows information collection, maintenance and distribution for the development of trading-partner profiles and product-information subscriptions.

2. Product information: Enables the distribution and

periodic update of product and design information, including product change notices and detailed technical specifications.

3. Order management: Supports the full order-management business area, from price and delivery quoting through purchase order initiation, status reporting and management. Order invoicing, payment and discrepancy notification are also managed using this cluster of processes.

4. Inventory management: Enables inventory management, including collaboration, replenishment, price protection, reporting and allocation of constrained products.

5. Marketing information management: Enables communication of marketing information, including campaign plans, lead information and design registration.

6. Service and support: Provides postsales technical support, service warranty support and asset management capabilities.

7. Manufacturing: Enables the exchange of design, configuration, process, quality and other manufacturing floor information to support a "virtual manufacturing" environment.

While interoperability within a supply chain is a major goal, interoperability between supply chains is just as important. Few companies are part of only a single supply chain; most are involved in a number of them. The RosettaNet model aims to include components that are truly universal, recognizing that some must be unique to meet the specialized requirements of specific businesses.

RosettaNet seeks to ensure that small and medium-size businesses around the world can implement a unified approach to e-business. ▀

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Using RosettaNet PIPs For Order Management

In this scenario, based on a real implementation by Intel Corp. and one of its distributors (www.intel.com/ebusiness/it/solution/wp030602.htm), the use of RosettaNet PIPs for standardizing back-end computer-to-computer interaction helps eliminate many manual steps. Humans are involved in making decisions and changes, but the systems perform validation checks and trigger new actions based on previous transactions.

Customer	RosettaNet PIPs	Supplier
Purchasing:		Customer service:
Buyer creates purchase order in ERP system.	3A4 (request purchase order)	Seller receives purchase order in ERP system.
Buyer receives purchase order change in ERP.	3A7 (notify of purchase order update)	Seller initiates purchase order change in ERP.
Buyer initiates purchase order change request in ERP.	3A8 (request purchase order change)	Seller receives purchase order change request in ERP.
Receiving:		Warehouse:
Buyer receives shipping document in ERP.	3B2 (notify of advance shipment)	Warehouse creates shipping document in ERP.
Buyer receives invoice in ERP.	3C3 (notify of invoice)	Credit issues an invoice document in ERP.
Finance:		Finance:
Accountant creates payment advice in ERP.	3C6 (notify of remittance advice)	Credit receives payment advice in ERP.

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Performance based on rPerf (Relative Performance) results of 2.50 for a 1-way p615 using 1.2GHz POWER4+ processors and 16GB of memory vs. 1.19 for a 1-way p610 using 450MHz POWER3-II processors and 8GB of memory. rPerf is an IBM estimate of commercial processing performance. Pricing based on p615 Express Configuration with 1-way 1.2GHz POWER4+ processor, 1GB memory and one 36.4GB disk drive at \$5,745 vs. p610 Express Configuration with 1-way 450MHz POWER3-II processor, 1GB memory, CD-ROM and one 36.4GB disk drive at \$8,895. Both Express Configurations include AIX license and one year of Software Maintenance for AIX Operating Systems (SWMA). ²For p615 Express Configuration. U.S. list prices are current as of 6/23/03 and are subject to change without notice. Reseller prices may vary. IBM, the e-business logo, AIX, eServer, POWER4+ and pSeries are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. UNIX is a registered trademark of The Open Group in the United States and other countries. Other company, product and service names may be trademarks or service marks of others. ©2003 IBM Corporation. All rights reserved.

Averting an IT Collision

Insurance company relies on host access software to streamline IT operations and ease merger integration.
By Linda Rosencrance

WHEN LIBERTY Northwest Insurance Corp. acquired North Pacific/Oregon Automobile Insurance companies last year, it faced a major challenge: It needed to centralize its IT infrastructure across the merged companies, consolidate multiple emulation platforms and make it easier to adopt new technologies.

At the time, Portland, Ore.-based Liberty Northwest, a wholly owned subsidiary of Boston-based Liberty Mutual Insurance Co., was primarily a workers' compensation company, while North Pacific/Oregon Auto was mainly a property-casualty company.

The problem was they each had different host-based platforms, says Eric Peterson, manager of IT infrastructure at Liberty Northwest.

While North Pacific was using Rumba software from Cupertino, Calif.-based NetManage Inc. in a thick-client format, Liberty Northwest was using a fledgling version of ZENworks from Novell Inc. and a smattering of software from Attachmate Corp.

After acquiring North Pacific, Liberty Northwest's IT infrastructure included a combination of mainframes and IBM's AS/400 systems, as well as multiple emulation platforms to access these host systems, Peterson says.

With the merger, Liberty Northwest's IT staff had 1,000 desktops to manage in multiple locations and was responsible for consolidating operations, moving offices, moving data centers and upgrading all desktops to Windows 2000. And the staff had to do all that without compromising service and support to its business units or its customers.

"We had to look at how we could make our lives easier," Peterson says.

And Liberty Northwest wanted to make sure that its sales agents and the sales agents from North Pacific could sell each other's products, according to Peterson.

CASE STUDY

Liberty Northwest decided it could meet its needs with NetManage's Rumba Web-to-Host technology, which provides corporate users with secure, simple, browser-based access to applications on legacy host systems, says Vijay Lal, director of product marketing at NetManage.

Using the Web-to-Host technology,

Liberty Northwest was able to quickly and easily deploy the browser-based software so host systems could be accessed with a click of a mouse, says Peterson. It allowed the sales agents to access the applications of either company over the Internet through a browser.

Rumba Web-to-Host provided sales agents with a unified interface, whether they were selling products from North Pacific or Liberty Northwest. But the technology also enabled the North Pacific sales agents to continue using that company's existing interface.

"Rumba Web-to-Host extends the mainframe out to the external world," says Lal. "With mergers or acquisitions, companies have different systems, and each of these systems has a system user interface, and you need to be able to merge your applications together so that the different groups of people using the applications are all experiencing the same look and feel."

Peterson says that if weren't for the ability to centrally configure these client sessions, he would have had to go around and configure every desktop manually or, at the very least, spend a significant amount of time on a client fix, or reconfiguration, in an automated fashion.

"With this product, I'm able to sim-

Rumba Web-to-Host extends the mainframe out to the external world.

.....
VIJAY LAL, DIRECTOR OF PRODUCT MARKETING, NETMANAGE

ply go to the Web server, change my config files, and I'm done," he says. "We centrally administer it, so we can control the desktop and the URL for the emulation sessions. The only thing we allow the users to do is change the font colors. If someone needs to use an emulation session, we can simply e-mail them the URL and say, 'Here you go.'"

Fewer People Required

Peterson says that because Rumba Web-to-Host is a single platform, Liberty Northwest saves money, since it doesn't have to maintain, administer or purchase multiple emulators.

"It benefits me because I can keep my head count lower," he says. "I don't have to have three or four techs, or have my server guy know three or four different platforms. And it's so quick and easy to administer, I only need one person and very few disciples."

Peterson estimates that he's probably saving the equivalent of one full-time employee, or more.

"When I have a change that impacts the entire environment of host systems, the number of man-hours I save is 300," Peterson says. "And I also save the travel costs to go around and touch every desktop. Now I do it in a matter of minutes from one location."

Lal says the license price for Rumba Web-to-Host is \$150 per seat. The product takes about 30 minutes to install and approximately 30 to 90 minutes to configure, he says.

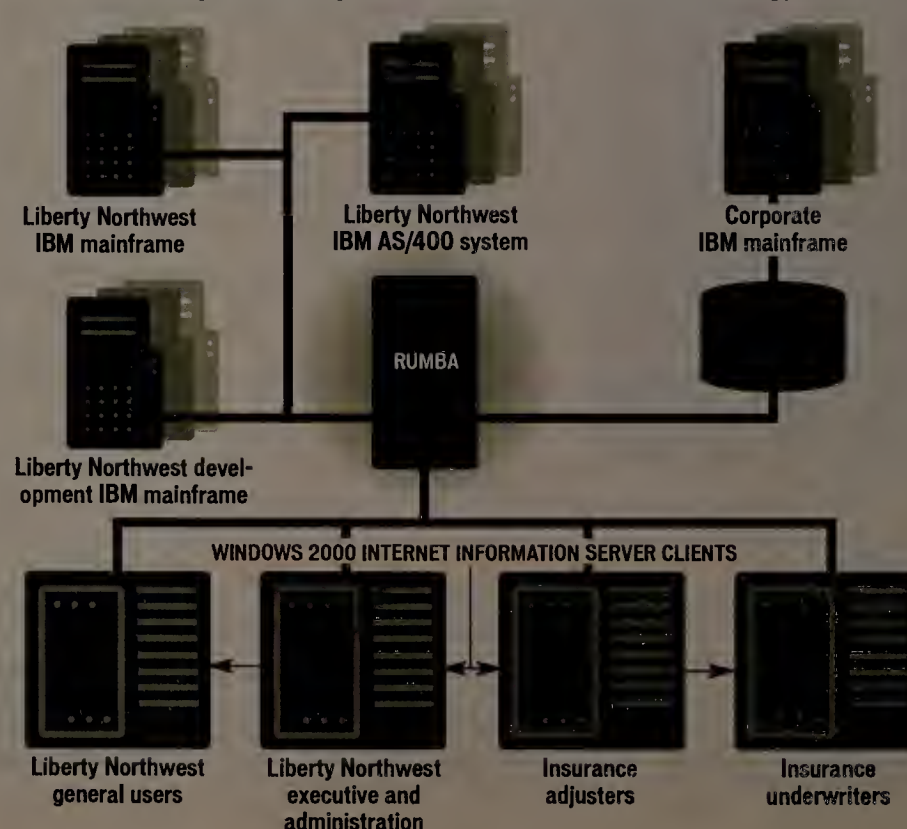
"Deployment — which happened last fall — was extremely fast," Peterson says. "The beauty of it is the user can do it. You point him to this URL and say, 'Click here.'"

Maximilian Flisi, an analyst at Framingham, Mass.-based IDC, says customers are generally satisfied with NetManage's Rumba Web-to-Host because it's easy to use and easy to manage.

"The benefit here is that there is a Web interface and there is no need for software on the desktop," he says. "Although there are about six other vendors in this space, including IBM and Attachmate, and they all have products that are easily deployable, NetManage's name is one of the ones that comes up more often than other companies." ▀

Liberty Northwest's Streamlined System

After Liberty Northwest acquired North Pacific/Oregon Automobile Insurance last year, it consolidated its IT infrastructure using NetManage's Rumba Web-to-Host technology.



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No Denying New Switch Vulnerability

Exploit code demonstrates how easily hackers can take advantage of a router security hole and launch denial-of-service attacks. By Mathias Thurman

VENDORS of IT security products frequently release information about vulnerabilities associated with their software and hardware. I receive 15 to 20 such advisories every day and have to examine each one to determine whether it's applicable to our infrastructure. If the advisory pertains to a product we use, I must figure out whether it affects us.

That's not always easy. Before making a decision, I need to know if there have been any reported compromises and if the exploit code actually works.

I also review who released the advisory, the potential effect on my company and what resources I'll need to mitigate the vulnerability. Getting that information requires additional research, but as my recent experience shows, that can be time well spent.

Recently, someone released code that exploits a remote denial-of-service vulnerability in any network device from Cisco Systems Inc. that runs Versions 11.x or 12.x of the vendor's Internetworking Operating System (IOS).

Researching the Flaw

Since there was a significant amount of information both from Cisco and on message boards, and the advisory pertained to versions of IOS that we run, I needed to do some research about the potential of this vulnerability.

Reconfiguring or upgrading routers to cope with the problem isn't easy, so I decided to

find out more about the risks we faced and ways we could protect ourselves without causing too much disruption to our operations.

Just as I started investigating the advisory, a colleague sent me two e-mails that included code exploiting the Cisco IOS weakness. Rather than relying on third-party

opinions, I decided to use this code to test the vulnerability myself.

To exploit this vulnerability, the program must send a series of specially

formatted IP packets with specific protocol types to the interface of a vulnerable router.

When executed properly, the transmitted packets can cause the router to flag the input queue as full. When this happens, the input queue refuses any more packets, causing the denial-of-service condition.

Network administrators must then reboot the router to reset the device and clear the problem. If the router isn't ac-

cessible from the network, someone must go to the data center and manually reboot the device — which isn't much fun at 3 a.m.

The code I received by e-mail wasn't compiled. I transferred it from my desktop to a Linux workstation I have in the lab and reviewed it for other malicious content.

Once I had it compiled, I needed to find a router to run tests on. I talked one of the network engineers into letting me borrow a spare Cisco router, then asked him to install one of the vulnerable versions of IOS and configure it in a way that should allow the exploit to work.

For the code to succeed, for example, the Time to Live (TTL) setting for network traffic has to be less than 2.

TTL is a value in an IP packet that tells a router whether the packet has been in the network too long and whether it should be discarded. I was sure that some of our routers had TTL settings within the vulnerable limits.

Warnings Validated

I ran a continuous string of packet traffic through the lab router while launching the attack. Within seconds, it stopped processing the legitimate packets and failed, just as the advisories had warned.

By running the "show interfaces" command on the router, I was able to see that the input queue had indeed filled up. And sure enough, the only way to reset or clear the input queue was to reboot the router.

I immediately sent out an advisory to the network team suggesting that they schedule an emergency inventory of all Cisco routers, switches and other devices running vulnerable versions of the IOS.

At this point, it looks like about 40% of our routers and switches are vulnerable.

It's difficult to get an exact number because many of the routers and switches across my organization aren't managed by our core network engineering team. Tracking all of those devices and determining the person responsible for each one would be a time-consuming process, especially when the devices are in different countries.

Mitigation

Mitigation for this vulnerability requires two actions. The networking team must first patch IOS or upgrade it to a nonvulnerable version and then configure the access-control lists to block the protocols that the code uses to attack routers. The latter could be accomplished either on the device itself or on the firewall, which protects the device.

As I write this, no IOS patches are available, but I'm sure that by the time this column sees print Cisco will have released one. That's good, because upgrading IOS on a production router isn't a trivial task. It normally requires hours — sometimes days — of lab testing before our engineers feel confident in upgrading.

While we're preparing to upgrade or patch the systems, we've been able to take other steps to protect ourselves. For example, we obtained enough information about the exploit to create intrusion-detection system rules to watch inbound traffic for signs of attempts to launch this particular denial-of-service attack.

It has been a few days now, and we haven't seen any traffic indicative of this attack. So far, so good. ▀

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum: **QuickLink a1590**

To find a complete archive of our Security Manager's Journals, go online to computerworld.com/secjournal

SECURITY LOG

Security Bookshelf

Linux Security Cookbook, by Daniel J. Barrett, Richard E. Silverman and Robert G. Byrnes; O'Reilly & Associates, June 2003



The authors stress upfront that the *Linux Security Cookbook* isn't an all-in-one security reference and that security is a never-ending process. Then, rather than pontificating on security theory, they jump right into the topics. From various file-integrity techniques, to encryption, authorization, monitoring and logs, the book includes many "recipes," or examples. These include keystrokes, shell code and explanations that focus on different aspects of Linux security. Each recipe contains the problem, solutions and discussion for the various topics. The authors describe the techniques in detail and say where to get the application or utility used in solving the problem. This is a great reference book for intermediate and seasoned systems administrators.

— Mathias Thurman

St. Bernard Updates Patch Software

San Diego-based security vendor St. Bernard Software Inc. last week upgraded its UpdateExpert patch management software with new features that include support for Hewlett-Packard Co.'s OpenView management platform, disconnected network support and custom reporting options. UpdateExpert 6.1 features a Smart Plug-in function that allows the software to be managed by HP OpenView, and the custom reporting option will allow companies to conduct trend analysis by combining machine and patch conformance report data, said the company. The new version of UpdateExpert is available now and starts at \$1,400 for a one-year subscription to support 100 workstations.

**SECURITY
MANAGER'S
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“Before making a decision, I need to know if there have been any reported compromises and if the exploit code actually works.”

BRIEFS

Sun Microsystems Upgrades Solaris 9

Sun Microsystems Inc. has set Aug. 13 as the date when it will release its latest upgrade of Solaris 9, which will include integration of the GNOME 2.0 desktop, the open-source interface used in Linux. The upgrade will also include improvements to the Solaris Live Upgrade feature. Users who are part of the Sun support plan will get the upgrade free of charge; others will pay a fee that will depend on the size of the machines being upgraded.

Navy Deploys Network Watchdog

The U.S. Navy's Office of Naval Intelligence (ONI) announced that it's deploying the nCircle IP360 vulnerability management system from San Francisco-based nCircle Network Security Inc. ONI will use the product to monitor its network for vulnerabilities and exposures in real time.

Data Management App Gets Upgrade

Last week, Billerica, Mass.-based data management applications vendor Trillium Software announced Version 7 of its Trillium Software System. New features include improved user accessibility and the ability to more easily integrate third-party data sources. The product is available now; pricing starts at \$119,000.

App Helps Manage Staff Performance

Development Dimensions International, a Bridgeville, Pa.-based human resources consulting firm, and Burlington, Mass.-based performance management software provider Performaworks Inc. have partnered to release MaxWorks, an online employee performance management system. Pricing ranges from \$15 to \$45 per user, depending on the number of end users licensed.

NICHOLAS PETRELEY

The Boiesy and McBride Show

THEME SONG (to the tune of *Pinky and the Brain*, a Steven Spielberg cartoon about two genetically altered lab mice who routinely try to take over the world): They're Boiesy and McBride, yes, Boiesy and McBride. One is a lawyer, the other's brain's fried. They're litigation mice, their briefs have been spliced. They're noisy, they're Boiesy and McBride, Bride, Bride, Bride, Bride!

Before each night is done, their lawsuits will be filed. By the dawning of the sun, they'll sue your first-born

child. They're Boiesy and McBride, yes, Boiesy and McBride. The threats they have tried are business suicide. But to prove their mousey worth, they'll litigate the Earth. They're noisy, they're Boiesy and McBride, Bride, Bride, Bride, Bride, Bride, Bride, Bride, Narf!

Boiesy: Ooh, what pretty curves and lines on the whiteboard, McBride! Is that a copy of a Pueblo Picasso?

McBride: That's Pablo, Boiesy, and the so-called pretty curves and lines before you constitute an analysis of how to succeed in business. Here is the equation of supply and demand. And over here, you have cost of materials and workmanship. Then you add the cost of marketing. Then, over there, we would divide a portion of the estimated profits into research and development.

Boiesy: Egad! Brilliant, McBride! Er — no, no. There's just one problem: We don't do any of those things well, do we?

McBride: Exactly, Boiesy, that's why

we're going to take an entirely different approach to building our business: Sue.

Boiesy: Oh, Sue is coming to help us? Narf! I like Sue! (Sings) If you knew Susie like I knew Susie. . . (McBride thwacks Boiesy on the head with a pencil.)

McBride: No, I mean *sue* as in take everyone we can find to court.

Boiesy (blushing): Well, McBride, I generally don't like to court more than one girl at a time, and right now, Sue is the only one for me.

McBride: No, I mean we get a lawyer, as in *you*, and then *you* exploit the justice system to reach one of two goals: Either we extort as much money as possible out of the competition, or we generate enough fear that someone purchases our company for a huge sum of money just to shut us up.

Boiesy: Oh, brilliant, McBride! Eh, no, no — what are we going to claim the other companies did wrong?

McBride: That is precisely the question, Boiesy. (McBride thinks for a moment, then glances down at a copy

of Windows XP and breaks into a sly grin.) Boiesy, are you pondering what I'm pondering?

Boiesy: Um, I think so, McBride, but isn't the AMD Duron a durable form of nylon?

McBride: I don't know, Boiesy, but I do know you are one pin short of a Z80 processor. Anyway, what does Microsoft do best?

Boiesy: Create software with security vulnerabilities?

McBride: Besides that, Boiesy. They take credit for the work of others. They put features from other companies' software into their products, call it "Microsoft innovation" and then charge people for it.

Boiesy: I see, McBride! So we're going to steal features, put them into SCO Unix and charge people more for it! Egad, that's astounding! Er, no, no — nobody seems to be interested in buying SCO Unix, McBride, so how do we charge them anything?

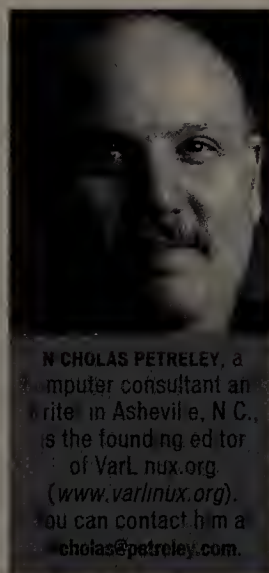
McBride: That's where you come in, Boiesy. We claim that all the good features of Linux came from SCO Unix, and then we threaten to sue everyone for using our intellectual property.

Boiesy: But it isn't actually our intellectual property, is it?

McBride: By the time anyone finds out, it won't matter, Boiesy. We'll have inflated our stock price, damaged the competition and gotten more press coverage than J. Lo and Ben. Come Boiesy, we must prepare for tomorrow night.

Boiesy: Why, McBride? What are we going to do tomorrow night?

McBride: The same thing we're going to do every night from now on, Boiesy — try to sue everyone on earth! ▶



NICHOLAS PETRELEY, a computer consultant and writer in Asheville, N.C., is the founding editor of VarL nux.org (www.varlinux.org). You can contact him at nchoias@petreley.com.

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PHYSICIANS TAKE THE HIPPOCRATIC OATH. JUDGES TAKE A CONSTITUTIONAL OATH. WHAT ABOUT SOFTWARE MAKERS?

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THE BEST-RUN BUSINESSES RUN SAP



QUOTE OF THE WEEK

“[I-communities] provide a rich testbed. . . . We’re helping members of the community unleash their own creativity around what technology can do.

— Debra Dunn, senior vice president for corporate affairs, Hewlett-Packard Co.



Q & A

Add One CIO and Mix Well

Tyco picks Dana Deasy (left) as the first corporatewide CIO on its new executive team. His mission: To integrate systems at disparate business units. **Page 38**

OPINION

Terminator 4: How to Fire Suppliers

Careful and regular pruning of your IT vendors will reduce costs and complexity, says columnist Bart Perkins. He provides guidelines for doing it right. **Page 41**



Corporate America is still in denial about the threat of cyber-terrorist attacks against critical facilities in the energy, telecommunications and financial industries. By Dan Verton

BOOK EXCERPT

EDITOR'S NOTE: Dan Verton's book gets its title from an emergency planning exercise for the 2002 Winter Olympics in Utah, code-named Black Ice. In the simulation, a major ice storm combines with the disruption of utility computer systems to produce regional blackouts, Internet outages, cell phone overload and telephone failures. It demonstrated the devastating effect of physical and electronic attacks on the power grid and everything that depends on power, including computer systems. An earlier exercise, run by the National Security Agency (NSA) and code-named Eligible Receiver, was equally chilling:

Prior to launching their attacks on June 9, 1997, officials briefed the team of 35 NSA computer hackers on the ground rules. They were told in no uncertain terms that they were allowed to use only software tools and other hacking utilities that could be downloaded freely from the Internet through any one of the hundreds and possibly thousands of hacker Web sites. In other words, the Pentagon's own arsenal of

secret offensive information warfare tools, which the NSA certainly had, could not be used. And while they were allowed to penetrate various Pentagon networks, the Red Team was prohibited from breaking any U.S. laws. The primary target was the U.S. Pacific Command in Hawaii, which is responsible for all military contingencies and operations conducted in the Pacific theater, including the tension-wracked Korean peninsula.

Posing as hackers hired by the North Korean intelligence service, the NSA Red Team dispersed around the country and began digging their way into military networks. They floated through cyberspace with ease, mapping networks and logging passwords gained through brute-force cracking and the more subtle tactic of social engineering — sometimes it was just easier to call somebody on the telephone, pretend to be a technician or high-ranking official, and ask for his password. The team gained unfettered access to dozens of critical Pentagon computer systems. With that level of access, they were free to create legitimate user accounts for other hackers, delete accounts belonging to authorized officials, reformat the server hard drives and scramble the data, or simply shut the systems down. They were able to break through the paltry network defenses with ease, after which they could conduct denial-of-service attacks, read or make minor changes to sensitive e-mail messages, and disrupt telephone services. And they did so without being traced or identified.

The results of the exercise stunned all who were involved. The NSA Red Team, using hacking tools that were available to anybody on the Internet, could have crippled the U.S. military's command and control system for the entire Pacific theater of operations. From a military perspective, that alone was a nightmare. But it soon became clear that the exercise had revealed much broader vulnerabilities.

During the course of analyzing what the Red Team had accomplished, NSA officials discovered that much of the private-sector infrastructure in the U.S.,

Black Ice

such as the telecommunications and electric power grids, could easily be sent into a tailspin using the same tools and techniques. More importantly, one former high-ranking NSA official indicated that the exercise revealed it would be possible to cause "strategic damage to the U.S. money supply."

Utilities

During any given year, the average large utility company experiences about 1 million cyber-intrusions that require investigation to ensure that critical system components have not been compromised. In addition, data collected by Alexandria, Va.-based Riptech Inc. on cyber-attacks during the six months following the Sept. 11 terrorist attacks showed that companies in the energy industry suffer intrusions at twice the rate of other industries. And many of those attacks appear to be sponsored by governments or organizations in the Middle East. Power and energy companies averaged 12.5 severe or critical attacks requiring immediate intervention per company. That rate was more than twice the average rate of attacks for all 300 companies surveyed.

The energy industry and many other industrial sectors of the economy have opened their enterprises to a vast array of cyber-disruptions by creating inadvertent Internet links (both physical and wireless) between their corporate networks and the digital crown jewels of most industrial processes — Supervisory Control and Data Acquisition (SCADA) sys-

tems. These are the systems, including real-time programmable logic controllers, that manage the actual flow of electricity and natural gas and perform other critical functions in various industrial control settings, such as chemical processing plants, water purification and delivery systems, wastewater management facilities and a host of manufacturing firms. Control, disruption or alteration of critical commands, instructions and monitoring functions performed by these systems can be an issue of regional and possibly national security [QuickLink 39133].

Deregulation and the increased focus on the bottom line have forced utilities and other companies to move more and more operations to the Internet as a means of improving efficiency and reducing costs. In addition, there has been a simultaneous increase in the number of remote dial-in connections established between mobile and home systems belonging to technicians and the actual SCADA systems.

Telecommunications

Prolonged power failures have many casualties, the first of which is often the telecommunications infrastructure, including the Internet. But the telecommunications industry faces its own security challenges that, like those of the energy industry, are the product of market forces.

The industry has assisted adversaries by making it easier for the infrastructure to be targeted and disrupted. "The vulnerability of the [Internet and communications] infrastructure to physical attack has increased as service providers have concentrated their operations in fewer facilities," stated the report of the President's Commission on Critical Infrastructure Protection in 1997.

This remains a serious problem today, as many large data centers have been erected throughout the country that provide single points of failure, particularly from a physical attack perspective. Should those facilities be destroyed or severely damaged, hundreds and potentially thousands of companies that chose to outsource IT infrastructure or business processes could be left without mission-critical data and connectivity.

At the same time, there's been an enormous upswing in consolidation throughout the telecommunications industry, the result of deregulation and the unbundling of local networks. This has spawned millions of new connection points into the infrastructure that adversaries, malicious hackers and terrorists can use to exploit well-known vulnerabilities.

The susceptibility of telecommunications switching equipment to software-based disruption became clear during the 1990 collapse of AT&T's long-distance service. A few lines of incorrect code caused a cascading failure of 114 electronic switching systems. And while that failure was the result of an internal system glitch, the Commission on Critical Infrastructure Protection concluded that the same type of failure "could alternatively have been triggered maliciously by relatively small individual actions." It went on to state that newer generations of switching equipment are likewise "potentially vulnerable to remote access, alteration, or control by skilled attackers."

DEFINITION

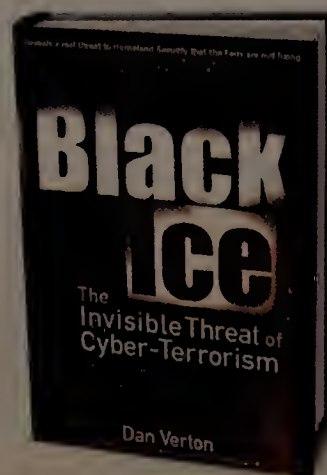
Cyber-Terrorism

The execution of a surprise attack by a subnational foreign terrorist group, or individuals with a domestic political agenda, using computer technology and the Internet to cripple or disable a nation's electronic and physical infrastructures. The goal is to not only hurt the economy of a region or country, but also to amplify the effects of a traditional physical terrorist attack by causing additional confusion and panic. It can also take the form of a physical attack — without ever touching a computer keyboard — that destroys critical Internet, communications and electric power nodes.

— Dan Verton

Key Themes in Black Ice

- **For the first time in our nation's history, the government alone can't defend its citizens.** With more than 85% of the nation's most critical computer networks and infrastructure in the hands of private companies, the front line of the war against cyber-terrorism runs through corporate America.
- **We shouldn't view terrorism solely through an historical lens.** Terrorists learn from past attacks and will try new tactics, such as disrupting computer networks to harm the U.S. economy.
- **Physical security and IT security are inextricably linked.** The bombing of a telecom switching center, data center or power plant can produce the same denial of service that a computer virus or worm does.
- **The 9/11 attack in New York was "the worst cyber-terrorist attack in history,"** because it disrupted the nation's most critical communications hub.
- **Al-Qaeda, which now uses IT and the Internet for communications and collecting intelligence,** is likely to evolve to using IT for cyber-terrorism. Cyber-terrorism directly supports al-Qaeda's strategic objectives.
- **Many U.S. Web sites give terrorists detailed information about possible targets,** including floor plans, backup sites, wired and wireless networks, oil pipelines, ventilation systems and more.



Financial Services

Trillions of dollars change hands every day in the U.S., thanks to electronic transaction and payment systems running on computer networks that rely on uninterrupted sources of electric power. But deregulation in both the energy and telecommunications industries has helped create multiple points of potential failure in the support networks that serve the financial community — support networks that were once operated end-to-end by single providers. Therefore, regional failures or disruptions of the energy and telecommunications systems that power the cyber-infrastructure of the financial community would have an immediate impact on banks, financial services companies, payment systems, investment companies, and securities and commodities exchanges.

Unfortunately, conducting strategic attacks has been made easier by the increase in mergers and acquisitions in the financial sector, which often result in centralization of operations centers. And while key organizations, such as the New York Stock Exchange, have undertaken efforts to increase diversity in support infrastructure, the attacks of Sept. 11, 2001, proved that massive physical attacks that disable critical power and telecommunications infrastructure can stop the nation's financial dealings dead in their tracks.

Drunk With Denial

Despite these lessons, many in corporate America remain unconvinced. Two months after the attacks, the wounds still wet and raw, a survey of 459 CIOs at major companies found that just 53% of firms had business-continuity plans, and less than half had IT security awareness and training for employees. The private sector remains drunk with denial.

But if the private sector has been operating under the influence, its bartender has been the federal government and its policy of allowing market forces to determine the level of investment in security. Former Virginia Gov. James S. Gilmore III (R) says the Bush administration's policy of relying "on private-sector willingness to take certain security measures and bear the costs" has had little impact to date on the state of security readiness in the private sector. ▀

Reprinted with permission from *Black Ice: The Invisible Threat of Cyber-Terrorism*, by Dan Verton (McGraw-Hill, 2003). Verton is a Computerworld reporter.

CATERING TO True-blue Customers



JOSEF GAST

Customer loyalty software helps companies figure out how to keep their clients for the long term. By Mark Leon

CUSTOMER SATISFACTION is good, but customer loyalty is even better. "A satisfied customer is one who sees you as meeting expectations," says John Samuels, a senior manager in the marketing department at CDW Corp., a Vernon Hills, Ill.-based direct marketer of more than 50,000 hardware and software products, with net sales of \$4.3 billion. "A loyal customer, on the other hand, wants to do business with you again and will recommend you to others."

CRM packages may help measure satisfaction, but not all of them can be used to benchmark loyalty, and the link is tenuous. A good loyalty program, according to Bob Chatham, an analyst at Forrester Research Inc. in Cambridge, Mass., combines customer feedback and business information with sophisticated analytics to produce actionable results. This is why IT has to take the lead in loyalty.

"IT is just about the only department that can coordinate between business processes, external data-analytic vendors and the executives who can translate output into action," says Chatham.

Five years ago, CDW started working with Walker Information Inc., a 64-year-old market research firm

in Indianapolis that focuses on customer loyalty, to gather customer experience data. "Initially, these were phone surveys" with cycle times of two months that were used to generate reports, says Samuels.

As a beta customer, CDW in April 2002 replaced the phone surveys with Walker's SmartLoyalty service, which includes an e-mail solicitation that directs willing customers to a Web site that Walker co-hosts with CDW. It dramatically reduced survey cycle times, and some reports are even generated in real time.

"It's not that difficult to do Web surveys," says Harry Watkins, a research director at Aberdeen Group Inc. in Boston. "Walker's real value is that they have built validated, multivariate measures of loyalty into their software. As an ASP, Walker also acts as a consultant, helping companies determine the causal variables that determine loyalty."

SmartLoyalty divides customers into four "buckets," or categories, commonly used for analyzing customer loyalty. CDW compared a customer's purchasing behavior with his bucket and then in further testing saw that all the buckets lined up very well with customers' behavior. "In other words," says Samuels, "we proved that the software-generated model was very predictive."

In response, executives sought sales improvements. For example, the model told them that customers wanted more out of the Web site and from account managers. So CDW's CEO directed the CIO to develop a response plan, which led to a new search engine and a Web site that delivers more product information.

"And now our account managers are trained to provide more than just 'speeds and feeds,'" says Samuels. "For example, they are trained in areas such as security and disaster recovery." These changes are paying off, he says, adding, "Each year that we have used SmartLoyalty, we have seen the percentage of truly loyal customers increase."

Hitting Jackpots

At Harrah's Entertainment Inc. in Las Vegas, CIO Tim Stanley says focusing on loyalty has helped push the casino chain's numbers in the right direction. In 1997, Harrah's launched a loyalty program that pulled all customer data into a centralized warehouse and provided sophisticated analytics. "We wanted to better understand the value of the investments we make in our customers," says Stanley.

But this analysis came at a price. "Back then, we

used Informix running on NCR for both our operational and analytic systems," he explains. "When we converted to the centralized warehouse, the analytic system was a real dog, far too slow."

So in 1999, Stanley offloaded the analytics to Tera-data, the NCR Corp. database designed for large data sets and parallel architectures. "And the performance improvement was stunning," he says. Harrah's now does near-real-time analysis: As customers interact with slot machines, check into casinos or buy meals, they receive reward offers based on the predictive analyses.

The data revealed other trends as well. For example, Stanley says Harrah's previously focused mostly on high rollers. But as executives further studied the analyses and reports, they realized that the person who visits a casino once or twice a week and spends modestly is a great investment. "This was a big 'Aha!' for us," Stanley says. The result was a new rewards program tailored to low rollers.

Paying Dividends

"We have seen consistent growth in revenue and profits every quarter since 1999, when we implemented the new loyalty program," says Stanley. "By cross-correlating questionnaire analysis with our revenue numbers, we estimate a steady 60% ROI year after year on our investment in customer loyalty."

Online gift vendor 1-800-flowers.com Inc. chose software from SAS Institute Inc. for its customer loyalty system because of the price. "Analytical tools like SAS Enterprise Miner cost about \$150,000 — a lot cheaper than the \$2 million you might spend on a Siebel campaign management system," says Aaron Cano, director of customer knowledge at 1-800-flowers.com in Westbury, N.Y. After only a few months, he has already seen more orders in key segments. Cano uses the analyses to profile the behavior of customers who come back five or six times a year and identifies others with similar profiles for targeted marketing.

"In order to do this right, you need to use proven methods in statistical, experimental design," says Radek Zapert, senior manager for the financial services unit at BearingPoint Inc. in McLean, Va. But new tools are making that easier to do.

"Five years ago, I would have said you needed a Ph.D. in statistics to really leverage a tool like SAS Enterprise Miner, but that is no longer the case," says Cano. "Now all you need is a good understanding of the business and an analytical mind-set." And technology plays a critical role in turning that into action.

When CDW began using SmartLoyalty, Samuels already had a rich source of market research reports. "The problem was that all this information was on thousands of sheets of paper, and there was no way to get it quickly to the right decision-makers," he explains.

That's where IT closes the loop. Aberdeen's Watkins puts it this way: "With good customer loyalty technology, IT can wire the voice of the customer back into the enterprise." ▀

STAT

15%
of companies worldwide are making an effort to create emotional loyalty. But in today's demand-driven markets, those companies have a big advantage over the many businesses that are still looking only at customer satisfaction.

Leon is a freelance writer in San Francisco.

Q&A

Tyco International Ltd. has added its first corporatewide CIO position to bolster the \$36 billion conglomerate's brand-new executive team. It's part of a housecleaning following last year's fraud and accounting scandals under former CEO Dennis Kozlowski. To fill the new CIO position, Tyco has chosen a man who has had success with integrating IT at global business segments. **DANA S. DEASY** previously spent nearly four years at Siemens AG, where he was CIO of the Americas, led about 20 business unit CIOs and had an IT budget of \$600 million.

Deasy spoke with Computerworld's Jean Consilvio about how he hopes to use his global expertise to help Tyco find common ground among its five disparate businesses, some of which were added during a recent acquisition binge.

What are the benefits of being Tyco's first executive-level CIO? One of the advantages of being the first at anything you do is that you have a chance to create it, as opposed to inheriting and then figuring out how to change it. [Add to] that working with an executive team that's basically new, with everybody out creating their organization, and you definitely have some natural synergies and camaraderie that I believe will develop a lot quicker.

And one of the exciting things I see in coming to Tyco is that I'm working with an executive team that is extremely bright, very enthused, thoroughly oriented throughout the mission at hand about what has to be done in bringing the various Tyco units together.

What three key points did you learn at Siemens, and how can you apply them to your new role at Tyco? Clearly the first one is to acknowledge and respect that the [business unit] CIOs are actually the experts in the business they work in and draw upon that expertise.

No. 2 is, at the end of the day, all the CIOs out there really do want to cooperate as long as you can acknowledge that they have a line of business they work for, they have a boss they need to work for, and what you need to do is find that common ground that they all want to work on. And the third one would be... go after the low-hanging fruit first. Go after the things that help build the credibility, not only of your own office, but [also] the credibility of



“It's not too often you get a chance to come into a company who's redefining itself with a brand-new set of corporate officers. It's just an exciting opportunity.

.....
DANA S. DEASY, SENIOR VICE PRESIDENT AND CIO, TYCO INTERNATIONAL LTD.

the community of CIOs you're working with, and get some early momentum going. There will be so much more difficult things that have to be accomplished, and you definitely want to get some quick wins.

How will you measure savings in networks, data centers and applications? Do you know what you're stepping into there? Yeah, I think I do, because prior to coming on board at Tyco, I was at Siemens, I was at General Motors. In both of those environments, I was stepping into worlds where there was not a lot of good understanding of the budget and how much was being spent. So I do have an appreciation that [on] Day 1, is there going to be an understanding of the IT landscape and how much we spend? No. That is going to have to be analyzed, baselined. And then you draw upon what I mentioned earlier as your quick wins.

What lies ahead for you in integrating the supply chain across business segments? Tyco's involved in a lot of different products, services, systems, solutions. Each of those have supply chain needs, and each of those need to be reviewed in terms of how integrated is the supply chain within the business segment. Do you want to start looking at cross-business segment integration? Without a doubt. The first opportunity is to understand how well Tyco has done supply chain integration within the businesses.

What's the biggest challenge in integrating data for business users at Tyco? You have to find [out] what is it that everybody needs and nobody has but everybody

DANA S. DEASY

Age: 44

New job: Senior vice president and CIO at Tyco International Ltd. Tyco is incorporated in Bermuda, but Deasy is located in Princeton, N.J.

Started: July 28

Reports to: CEO Ed Breen

Previous jobs: CIO of the Americas at Siemens AG; CIO for the Locomotive Group at General Motors Corp.

wants. And then you have to be realistic to determine where does that information reside and does it reside today in common systems. Do we have the opportunity to create executive information systems, and what will be involved in doing that? At most companies today in corporate America — this is not just a Tyco issue — the CIOs are being hard-pressed to get their arms around financial controls and the data that drives those, and I expect it will be no different here at Tyco.

Do you see IT helping Tyco win back credibility among its shareholders? There's probably a lot of areas, everything from being able to ensure that we have strong financial control to supporting the needs of internal control and audit. [We've got] to demonstrate that Tyco can really bring its various business units together and find common ground for not only standardization of processes, but good old-fashioned cost savings.

How do you choose the right technology supplier? The phone's already ringing off the hook. Every supplier, vendor, all the big boys want to get in and talk. There is no doubt that there is going to be an aggressive push to look at opportunities to do better vendor management in the IT space. I can tell you there's going to be a good old-fashioned way you do that: an investigation of need within the company, what has to be accomplished, who are the players that can do that, and then let them propose how best they can accomplish that. ▀

Add One CIO And Mix Well

After the big scandal, Tyco picks an experienced CIO to join its new executive team and integrate systems of disparate business units.

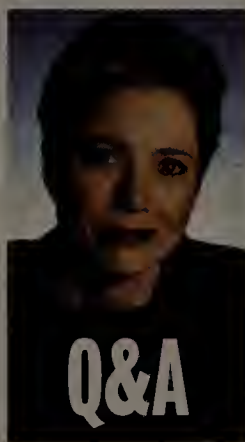
Global Laboratory

Hewlett-Packard employees gain international business savvy while bringing IT to communities in developing countries.

In the August issue of Harvard Business Review, **DEBRA DUNN** and Keith Yamashita discuss a series of initiatives — called *i-communities* — in economically deprived areas such as the town of Kuppam in the state of Andhra Pradesh, India. Sponsored by Hewlett-Packard Co., *i-communities* use public/private partnerships to boost economic development through technology while building markets, testing products and honing the global savvy of HP leaders. Dunn, senior vice president for corporate affairs at HP, told Kathleen Melymuka how HP has learned to do well while doing good.

What's an i-community? Essentially, an i-community is a collaborative engagement with government and nonprofit or community-based organizations in a specific area to figure out how information and communications technology can best accelerate economic development in ways sustainable for the community and HP.

There's clearly a philanthropic component on HP's part, but you say it's also tied to business strategy. How? In a couple of critical ways. When we think long term about where opportunities for growth are in our business, accessing developing markets is very high on the list of opportunities. Today our products are probably sold to the top billion people in world, but the top [economic] tier is getting smaller as a percent of the total. So figure out where growth will



come from. It's critical to develop products [for] people low on the economic pyramid. These [i-communities] provide a rich testbed: deep engagement with real customer needs in a different segment of the economic strata. And governments in emerging markets are applying technology as a way to deliver services because that's fundamental to their success long term. This is getting us closer to that segment.

Give me an example of how the project has affected the community. One of the big services we focus on is agriculture. [Kuppam] is a pretty remote place and not a lot of resources are available to help improve productivity. If I'm a farmer, I now have access to an agricultural advisory group via e-mail

through the community information centers and can use them to diagnose all kinds of problems. I can tap into the village photographer — another thing we've set up — and send in digital photos of problems with crops and get quick turnaround advice.

What impact do you foresee over the next two years of the three-year project? There will be more community information centers. More citizens will have direct access, target schools will be more wired, more teachers will be trained. But some of most exciting things will come from the community. That's the power of these projects. They get to play with things we take for granted and figure out ways to use them that are relevant to them, while tapping the technical expertise from HP.

Can you give me an example? In another project in India, an entrepreneur run-

ning an information center discovered he could use a projector and turn a computer into a cinema. He's charging a few rupees for a service that's highly valuable in the community. So we're helping members of the community unleash their own creativity around what technology can do.

Why the three-year deadline? It's important to create some urgency and incentive around milestones and around organizations getting resources quickly so you get traction. We have a lot of people on the ground there. The goal is to get the project to a level where it's sustainable without deep involvement by HP.

What does HP actually get out of this other than potential long-term markets? HP also gets some short-term things. Employee motivation: Our employees want to be part of a company that focuses on something bigger than making a profit. We get a lot of insight into what it's going to take to compete in this segment of the market. We're very much a part of the dialogue in India about trying to provide affordable technology to rural communities, and that provides helpful intelligence for our mainstream business. And for the people who actually work on these projects, the development is unbelievable. This stuff is really hard. You learn so much in terms of perspective and being careful about assumptions and about the dynamics in developing markets. It's phenomenal.

Many of our readers are technologists in nontechnology companies. Are there opportunities for nontechnology companies to get involved in these types of initiatives? I think there are. This market is very much a services-based, shared-use market. The services that will be delivered will be in the health area, entertainment, information — all kinds of things. That's the next ring of the circle: the content-based solutions that would feed these types of projects.

Our goal is to deliver something in the short term, but we want to stimulate the economy, and that fuels the broader market for all kinds of organizations. There are opportunities for many different kinds of companies to be involved. ▀

Melymuka is a Computerworld contributing writer. You can contact her at kmelymuka@yahoo.com.

This is the latest in a series of monthly discussions with Harvard Business Review authors on topics of interest to IT managers.

Kuppam, India: One Year Later

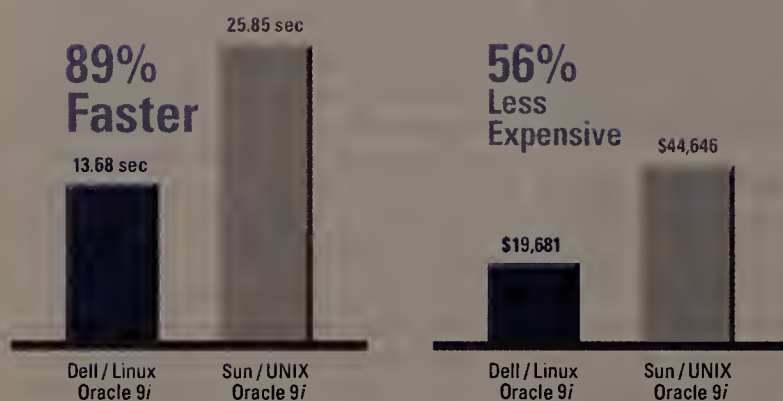
A year into the HP project, Kuppam's i-community includes the following:

- **Five community information centers**, each with five to 10 computers, staffed by local entrepreneurs who offer a suite of Internet-enabled services and help local people access them for a small fee. The entrepreneurs tap into government loan programs for initial funding and receive technical assistance from HP and other partners.
- **Computers and Internet access** at targeted local schools.
- **A government portal**, developed largely by HP, that gives residents information and access to government services in areas such as health, literacy and agriculture.
- **A mobile, wireless service center** that takes the i-community's technology services on the road to those who can't manage to get into Kuppam. It's currently operated by HP employees but eventually will be taken over by a local entrepreneur.

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BART PERKINS

Terminator 4: How to Fire Suppliers

MOST ORGANIZATIONS recognize the importance of having a rigorous supplier selection process and focus a lot of attention on supplier acquisitions. However, many underesti-

mate the importance of having a supplier termination process. Since the IT supplier portfolio must match a dynamic business strategy and ever-changing IT architecture, an untrimmed portfolio will continue to expand. It's essential that your supplier portfolio be reviewed and pruned regularly to remove suppliers or products that are no longer needed. Careful pruning will reduce costs and infrastructure complexity.

But in most organizations, getting rid of an IT product, service or vendor is an unusual event, and there's no clear process to follow. One client with a rigorous selection process described his company's approach to supplier management this way: "We greet our suppliers at the door with a two-by-four to the head. Afterwards, those who are still standing are invited in and *never asked to leave.*" He's not alone. My company's studies show that the average supplier portfolio is at least 50% larger than our clients estimate. In other words, most companies don't know just how many vendors they really use! An audit of one client's portfolio revealed 3,000 suppliers, after the client estimated 300.

When your supplier portfolio mushrooms out of control, it often indicates that you've also lost control of your procurement process and your architecture. And supplier



management costs skyrocket. A well-trimmed portfolio can be managed for less than 5% of total external spending, but the cost of managing an overly large portfolio can amount to 20% of total external spending. Support costs will also be higher than necessary.

Review your supplier portfolio, searching for suppliers who are underperforming or whose products no longer meet your architectural specifications. Target unnecessary products, even if you

can't eliminate the supplier entirely. Then take steps to terminate them, using these guidelines:

1. Check contracts to make sure there are no penalties, givebacks or other repercussions for termination.
2. Create a migration plan. If you have a portfolio baseline, it will identify all the systems, projects and people who rely on the product or service being jettisoned. Determine how those affected will be supported, before termination begins.
3. Use your vendor management group to manage the termination process. A good vendor management group will assure that the process is consistent and fair for all parties.
4. Explain the decision and the rationale to the supplier directly. No one deserves to learn of his own dismissal around the water cooler or, worse, from an industry publication.

5. Assess the cultural impact. Individuals can be fiercely loyal to a particular technology that they helped create or feel is unique. Provide special hand-holding to ease the pain and draw dissenters into the fold.

6. Make terminations visible. Publicize the new IT architectural standard in the department newsletter, on the corporate intranet or through other channels. Everyone needs to know about the termination before the next architectural decision or the next salesperson's call.

7. Pay attention to termination details. Protect yourself from security breaches by remembering to change passwords and take access cards from vendor personnel. If you're dropping all of a supplier's products, remove the supplier from the accounts payable system.

8. Be creative if obstacles arise. One client faced enormous pushback from its applications group, which had opposed a decision to migrate to new hardware. After more than a year of requests for cooperation, the vice president of operations took a new approach: He announced that the old hardware had been sold and would be loaded onto a truck on a specified date. The applications group finally rose to the occasion, scrambled to convert everything to the new hardware and succeeded with three days to spare.

Every superfluous part of your supplier portfolio increases costs, complicates your procurement process and adds unnecessary complexity to your infrastructure. Leverage your supplier management efforts by reviewing your portfolio regularly and terminating any extraneous suppliers and products. ▀

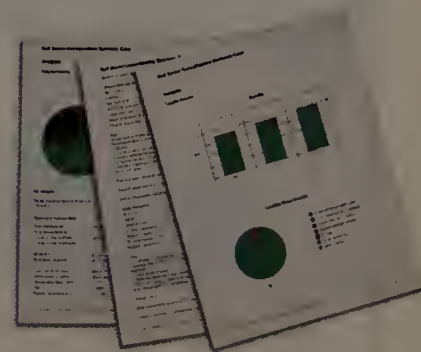
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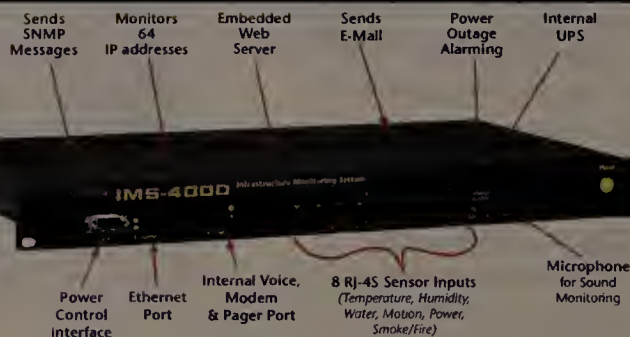


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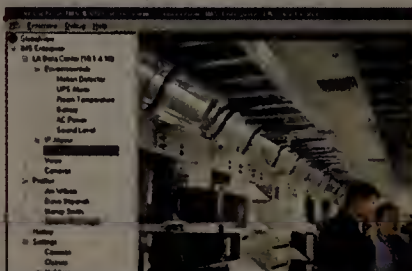


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IT Careers: BDPA Focuses on Career Growth, Entrepreneurs

When more than 2,500 individuals meet for the Annual Black Data Processing Association Conference in Philadelphia Aug. 13-17, they'll get a rich blend of three critical career components — technical expertise, mentoring and coaching of individuals, and skills to lead start-up and established businesses.

The conference reflects BDPA's overall mission to open the doors of technology for African-Americans, from offering programs to expose families to technology to offering the latest in IT skills courses. The more than 40 chapters found throughout the United States offer programs ranging from the Homework 911 e-Learning hotline to Black Family Technology Awareness Week.

According to Milt Haynes, BDPA president and a feature release development manager at Lucent Technologies, that's why the conference agenda is far-reaching. Sessions range from the latest in wireless technologies and the role of IT in major current events to performance comparisons of .NET, XML and Oracle. "Our conference theme is Classroom to Boardroom, focusing on the fact that education is a life-long effort," Haynes says. "We have to start at the elementary school level to attract, mentor, coach and educate individuals for IT careers."

In addition to the highly technical sessions, the conference is offering workshops on a culture-specific approach to e-learning, the challenges for African American women in the IT workforce and how faith-based programs can assist in bridging the IT divide. Executive Pathways includes sessions designed to help IT

professionals navigate their careers. As part of the conference, BDPA will also hold its annual career fair, this year featuring 30 major employers. Conference attendees will be able to take advantage of on-site career coaching on everything from resume writing to interviewing skills.



Haynes is watching over the conference as the outgoing president of BDPA. His goals have been simple — to build an infrastructure, to capture data on existing IT expertise among African Americans to pair up with hiring demand, to assist chapters in bringing the Classroom to Boardroom program to their communities and in growing the BDPA's entrepreneurial program.

"The biggest obstacle IT professionals face is in keeping current with the job market," Haynes, who also served on the Blue Ribbon Diversity Panel for ITAA, says. "We need to stay one step ahead of the learning." While outsourcing is a constant concern for IT professionals, Haynes believes the best and most challenging work is remaining in-house where IT professionals can work the customer-face aspect much better than any outsource provider. "Companies who are looking to the future want to keep development inside to maintain a strong workforce," he says.

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Software Engineer III: Work with engineers and chemists to analyze business needs, design, implement, test, modify and release client/server web applications to synthesize and optimize small molecules that have the potential to enter clinical development and become medicines. Provide technical support for chemists. Design and develop repository gateway for partners. Skills include: Java/J2EE, Python, Oracle, SQL, XML, HTML, Perl, Shell, JavaScript, C/C++, Windows, Linux, UNIX, CGI, chemical informatics tools and other development tools/platforms. Requirements include a Master's degree or equivalent in Computer Science, an Engineering discipline or closely related field. No work experience required. Applicants must have unrestricted authorization to work in the United States. Salary \$66,000/year. 40 hours/wk. Respond with two copies of resume to Case #200202756, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114.

ASSOCIATE IS ANALYST
Resp. for the devlpmnt & deployment of SAP sys. for the co. Specific duties include: (i) gathering, dsngng, configuring, scripting, integrating & testing comp. scripts, interfaces & programs for a multi-landscape environment; (ii) documenting related interfaces; (iii) assisting Staff Consultants/SAP Sys. Analysts in evaluating user reqmnts for new or modified programs; (iv) utilizing all components of SAP devlpmnt environment to combine pre-dvlpd software objects w/customized programming & to generate applns that are highly integrated w/the SAP R/3 sys.; & (v) providing tech support to users of SAP programs. MS in Comp. Sci., Mgmt Info. Sys. or Bus. Must have working knowledge of UNIX, Perl, Cold Fusion sys. devlpmnt life cycle as well as comp. hardware & operating sys. High mobility preferred. 40 hrs/wk, OT as reqd, 8 am - 5 pm, \$64,240/yr. Qualified applicants please submit resume to: Manager, Beaver County Team PA Career Link, 2103 Ninth Avenue, Beaver Falls, PA 15010-3957. Please refer to Job Order No. WEB 346310.

BellSouth, a leader in providing local and cellular telephone, paging and mobile data services has multiple openings for the position of Systems Administrator in its Atlanta, Georgia office. Position requires relevant bachelor's degree or foreign degree equivalent and relevant experience.

For consideration, please forward your resume to: Ms. Lisa Burlingame, BellSouth, 2247 Northlake Parkway, Suite 800, Tucker, Georgia 30084. Please do not email or fax resumes. EOE

Computer Support Spec.: Marietta, GA. Provide technical support; maintain commercial credit card information system; coordinate conversion to new hardware and software. Req'd: BS (or foreign equiv.) in Elec. Engin., Comp. Science or rel. field & 2 yrs exp. in job offered or as Programmer/Analyst. Resumes to: Fast Trip Corp., 640 Whitlock Av., Marietta, GA 30064.

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Medical Database Systems Manager

Manages, administers, maintains, and configures a Unix/Linux/Windows/Mac LAN based client/server system including use of NFS and NFS to perform disk and file sharing with Samba system. Integrates multiple online/offline medical and genetic research databases and insures that such databases are capable of biology driven data mining. Requires a Bachelor's degree in Computer Science and one year direct experience. Send resume, no calls, to:

Medical College of Wisconsin
Attn: Employment Office-
JMC0811
8701 Watertown Plank Rd.
Milwaukee, WI 53226
Fax: 414-456-6502

Consultant, Financial Business Systems to analyze complex IBM MVS mainframe based revolving credit card portfolio Vision 21 and Vision Plus software business systems and subsystems to direct team members in the design, development, implementation, and modification of software business systems to insure that systems enhancements such as late payment fee, skip payment, credit line underwriting, overlimit fees, and authorization match-off are properly integrated into the appropriate Vision based CMS posting system. Establishes parameters for daily batch cycles, supervises team members in coding for Vision Plus integration with VSAM database, and performs systems functionality analysis, unit testing and technical design of system including customization of system to meet various end users business analysis requirements. Requires Bachelor's Degree in Computer Science, Math, or any Engineering Field and three years direct experience. Work Location: 636 Grand Regency Blvd, Brandon, Florida. Send resumes only, no calls, to: Kathi Nogle, Household, 2700 Sanders Rd., Prospect Heights, IL 60070.

BellSouth, a leader in providing local and cellular telephone, paging and mobile data services has multiple openings for the following positions in its Atlanta, Georgia office:

Senior Software Developer
Software Engineer
Channel Analyst

All positions require a relevant bachelor's or master's degree or foreign degree equivalent and relevant experience including experience with Homebase software.

For consideration, please forward your resume to: Ms. Lisa Burlingame, BellSouth, 2247 Northlake Parkway, Suite 800, Tucker, Georgia 30084. Please do not email or fax resumes. EOE

Principal Software Consultant/Developer to provide strategic & tactical definition and direction to Co's Fund Analysis & Research Group. Will support recurring & ad hoc requests for data and analysis; will manage development stage of project lifecycles to include creating written system requirements, applications development, coordinating QA testing & implementing resulting systems solutions in a highly matrixed work environment. Will enhance unit's Sybase database tables & Perl loaders to support loading & disseminating data using Morgan Stanley Capital International/Standard & Poor (MSCI/SP) sector schemes; perform analysis, design & implement the data model for Marketing Event Planner; create & modify Sybase stored procedures; migrate Sybase SP and Perl loaders into new Sybase environment; and also redesign and improve data warehouse ETL (Extraction & Transformation Layer) process written in PERL and run over UNIX Solaris Platform. Requires Bach or equivalent in Computer Science, Engineering, Math, or Physics and 5 years in job offered OR 5 yrs exper in client/server development, OR Master's or equiv in C.Sc., Eng, Math, or Physics and 3 years in job offered OR 3 yrs in client/server development. Candidate must also possess demonstrated expertise in Sybase and Oracle database design & administration; demonstrated expertise developing application in Perl, Unix shell script, SQL and C++; and demonstrated expertise in data modeling and data warehousing modeling. Salary \$77,000/yr, M-F, 9AM-5PM. Send 2 resumes to Case # 200202126, Labor Exchange Office, 19 Stanford St., 1st fl., Boston, MA 02114. EOE. Applicants must be U.S. workers eligible to accept full-time employment in U.S.

PROGRAMMER/ANALYST sought by NJ based Securities Dealer. Must possess Bachelor's or equivalent in Electronics Engineering or directly related field and 2 years exp. in software development/design and analysis, implementation and testing using J2EE, ASP, PL/SQL, RDBMS, Oracle, UNIX, Windows. Respond to: Human Resources Department #GLM-806RJ: Knight Trading Group, Inc., 525 Washington Blvd., Jersey City, NJ 07310.

Programmer: Develop/write computer programs & maintain company Artificial Intelligence systems using SICStus PROLOG, C++, Java, JavaScript, Win2000, Unix, etc. Also assist in the development & maintenance of company's proprietary middle tier software program. Req. BS in Com. Sc. or closely related field + 2 yr exp. In job offer or Software Engineering. Resume to Personnel Mgr, WebTone Technologies, 3535 Piedmont Rd, Ste 800, Atlanta, GA 30305

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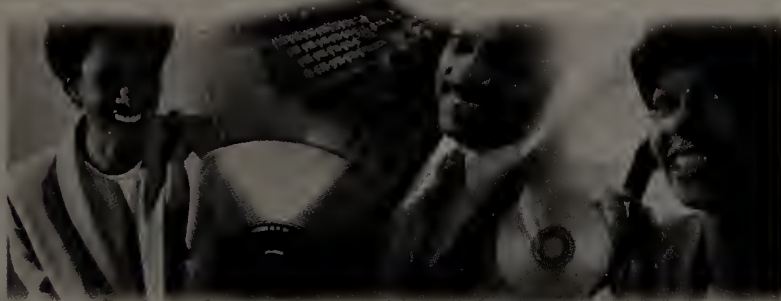
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Sr. SW Engr.- Develop, integrate, maintain & test complex communication protocols including, but not limited to: Sigtran, SS7/CCS7 & ISDN. Participate in design & code reviews of new SW & modifications to exist'g SW. Develop, maintain & test telecom applications & system SW responsible for configuring & controlling the system, internal communication between SW entities, fault tolerant & redundant operation of SW. Analyze & document computerized telecom system SW reqs., functional specs., architectural specs. & design specs. Must have M.S. in Comp. Eng'g, Comp. Sci., E.E. or equiv., + 2 yrs. exp. in job offered or 2 yrs. exp. w/telecom SW development. (Exp. may be gained before or after M.S.). In the alternative, employer will accept Bachelor's degree + 5 yrs. of progressively responsible post-grad SW development exp., including 2 yrs. telecom SW developmt. exp. Must have proficiency in C programming, as well as knowledge of telecom protocols. 40 hrs/wk; Salary: \$92,833/yr. Send 2 copies of resume to: Case #200201646, 2002 Labor Exchange Office, 19 Staniford St 1st Fl, Boston MA 02114.



Ketchikan Public Utilities Telephone Division is a rural, wireline telephone company (LEC) servicing over 8,000 customers with 2,000 lines.

KPU is currently looking for a person with knowledge of voice, data, and optical communication internetworking. Knowledge of AFC DSLAM & Tellant products would be a plus. intimate knowledge of Switched Ethernet, IP Television, Routing Protocols, TCP/IP, and MPLS, is highly desirable. Exposure to DMS100 and wireless technology would be helpful. Candidate should be proficient in use of advanced diagnostic tools including NMS management tools. Must be able to work well in a team environment and provide leadership to work tasks. Minimum of 4-years work experience in IP IT is required, formal education preferred. This is a full time position contingent on six (6) month probation, \$33.17/hr. plus benefits.

This position is open until filled. Complete job description and application available on the City's Website at www.city.ketchikan.ak.us or the City of Ketchikan 334 Front Street, Ketchikan, AK 99901, E-mail carolh@city.ketchikan.ak.us or Phone (907) 228-5631. EOE/AA.

www.city.ketchikan.ak.us

Programmer/Analyst, Must have Bachelor's in Computer Science or its functional equiv., and 2yrs exp. Oversee company technology system; analyze user needs, system capabilities. Install, upgrade software. Develop programs to improve production or workflow as req'd. 40 hrs/wk, 9AM-5PM. Competitive salary. Send resume to: USA Grocers Management, 7284 W. Palmetto Park Rd., Ste 101 South, Boca Raton, FL, 33433.

Computer Programmer, develop & write business apps computer progs. using Java, JSP, JDBC & SQL for documenting, data entry, retrieval & testing prog websites. Req: B.S. in Computer Science, Computer Engineer or Electrical Engineer. 40 hrs/wk. Job/interview site: San Bernardino, CA. Send resume to: Econo Lube N Tune, 1685 W. Kendall Dr, San Bernardino, CA 92407.

Network Engineer: (2) Job location: Matthews, NC. Design, develop & implement software solutions. Analyze requirements for reservations sys., accounting, credit cards, payroll & personnel. Test procedures & perform network adm. Req.: Bachelor's deg. (or equiv.) in Comp Info. Sys. (or other IT field or related). Resume to: NDASR Investments, 1600 S. Hwy. 81/287, Decatur, TX 76234.

Software Eng'r Q-Lytics Consulting Inc. seeks Software Dev't Eng'r in Wescosville, PA. Assist to develop applications incl. Oracle + Web applics (standalone + n-tier). Analyze software req's; work w/ eng. team; dev testing, programming + docs; upgrades + maint; also db design + modeling. Use technologies incl. UML, IBM WebSphere, WebLogic, Java, J2EE, XML, ERP, Oracle, DB2, CRM, Jbuilder, Visual Age for Java, Toad, DBArtisan + Vantive. Must have Masters in Computer Sci. + 6 mos relevant exp. Resume to: Q-Lytics, H.R., 1011 Brookside Road, Ste. 140, Wescosville PA, 18106.

Seeking qualified applicants for the following positions in Memphis/Collierville, TN: **Senior Programmer Analyst.** Formulate/define functional requirements and documentation based on accepted user criteria. Requirements: Bachelor's degree or equivalent in computer science, MIS, math, engineering or related field plus 5 years of experience in systems/applications development. Experience with J2EE development using UML modeling; UNIX Scripting; and SQL Scripting also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to: Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

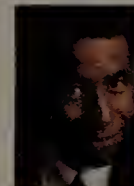
Prog Analysts to analyze, design, code and maintain web/client server applications using Java, C, C++, CORBA, J2EE, HTML, Servlets, XML, Weblogic Server, IIS, Oracle, MS Access etc under Windows, Sun Solaris OS; perform automation of functional/regression testing with WinRunner, eTester and Astra Quick Test; provide on site maintenance support such as debugging, modifications, fine tuning & code optimization. Require: BS or foreign equivalent in CS/Engg (any branch) with 2 yrs exp in IT. High salary, F/T, Travel involved. Resume to: HR, Semafor Technologies, Inc, 3300 Holcomb Bridge Road, Suite 212, Norcross, GA 30092.



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Programmer, Engg & Sc., 8a-5p, 40 hrs/wk. Formulate tech'l specs for mechanical & industrial processes/procedures automation & applics; prep detailed workflow chart for input, output & logical operations; test system; prep tech'l documentation; prgm websites using client-server technology, e-commerce application dvlpmnt, Java, EJB, JSP & XML. Bach or equiv deg w/major in Info Systms, Comp Sci or Engg, Electronics, Electrical, Mechanical, Industrial or related Sci/Engg. 1 yr exp in job or as comp prof'l w/above skills. Resume to: GTS, Inc. 3761 Venture Dr., Bldg. 100, Suite #240, Duluth, GA 30096.

Telephony Solutions Developer: BS + 2 yrs exp to incl Dialogic GLocalCall, ATL, Visual C++, Visual Studio.NET, SQL Server, COM/DCOM, Brooktrout RealCT SDK & call processing on digital & analog circuits req. Systems Analyst: BS + 2 yrs exp to incl Visual Studio, SQL Server, Visual C++, ATL. Exp reqd in documenting scope & dsgn, dvlpmnt & deployment of NET solutions req. Both pos req MCSD & demonstrated business communication skills as well as verifiable refs for above reqmts. Apply to jobs2003@a-t-g.com, Des Moines, IA

Senior Software Engineer: Design, develop, & implement off-the-shelf software solutions providing web-based billing & presentment, & account management using Java in a UNIX, Solaris, & NT shrink-wrapped development environment. Analyze & design software applications in n-tiered, web-based environment using OOA/OOD principles & UML modeling tools. Debug & solve complex problems in distributed environments using VisiBroker, C++, Netscape, Oracle, VisualCafe, VJ++, & Integrated Development Environment tools from Microsoft. Design, implement, & test relational database comprised of stored procedures & triggers to maintain data integrity with Oracle & MS-SQL. Implement GUI tools, elements in user interface & business logic using Java/XML, Visual Basic, C/C++ programming & Internet communications/security skills. Design, develop, & implement n-tier architecture solutions for internet based applications on Windows platform using IIS, ASP, SQL, & native Windows technologies. Bachelors degree (or foreign equiv.) in Comp. Sci/ Comp. Eng'g/Elect. Eng'g or closely related field, & 5 yrs of progressively responsible experience in job offered or as Software Developer/Eng'g. In lieu, will accept Master's degree (or foreign equiv.) in Comp. Sci/ Comp. Eng'g/Elect. Eng'g, or closely related field, plus 3 yrs of experience. Requires demonstrated expertise in completion of 2 full development cycles in Windows environ., including analyzing & designing software applications using OOA/OOD principles & UML modeling tools, & demonstrated expertise in analyzing various legacy print stream data file formats, including Advanced Function Presentation, MetaCode, DJDE, & PDF, as well as architecting solutions for extracting & manipulating data. 40+ hrs/wk; 8a-5p (M-F); \$90,500.00/yr. Submit resume in duplicate to: Case #200202545, Labor Exchange Office, 19 Staniford St, 1st fl, Boston, MA 02114. EOE

SOFTWARE, Sr. Systems Analyst. Complete Business Services in SF, C++, Java, ASP, Silktest (or equiv). Test/develop software systems and products. MSCS/IS. 1 yr. exp. Salary \$80,890. Fax resume (415) 584-5226.

Programmer Analyst needed w/exp in using Sybase, MS SQL Server, Erwin, CAST, Rational Rose, VB, MS Access, JAD, RAD, Sun Solaris & Windows 2000. Send resumes to: Triple Point Tech., Inc., 301 Riverside Ave., Westport, CT 06880. No in Person Resumes.

TechNation Software Consulting, Inc., a software consulting company with its main place of business at Sioux Falls, SD has multiple positions for Software Professionals.

Sr. Software Engineers: BS in CS, or equivalent with more than 5 years of recent programming experience or MS in CS with more than 3 years of such experience. Duties entail programming, gathering user requirements and customization of software in either of a) Database Systems which involves database design, data modeling working in both front end as well as backend applications on Unix and Windows platforms. Or in b) systems side programming in Unix, C, C++ which involves product development, working on telecom protocols or development of device drivers.

Both positions require knowledge of allied Internet technologies like Java, JSP, XML, J2EE and ASP. **Unix Systems administrators:** BS in Computer Sciences or equivalent with atleast five years of experience in an enterprise environment. (i.e. more than 500 users) Duties include extensive use of Network Implementation and Administration, System Integration, Backup and recoveries, shell scripting and System Securities. Experience in Management of Enterprise Network Storage devices (SAN or NAS), HP and Solaris Servers, switches, HUBs and in Veritas NetBackup systems.

TechNation provides onsite consulting services to clients across the United States and hence a key requirement for all positions is that candidates must be willing to relocate across the country for periods between 3-6 months or as needed.

Send resumes to Rona Troff, 300 N. Dakota Ave. Suite #505-B, Sioux Falls, SD 57104 or email to rtroff@tncinc.com. Fax: 530-733-2775.

IT Consultant: Roundarch, Inc. seeks an individual for its Chicago office to develop & deploy complex web content management systems (CMS) & portal systems for consulting clients using web-based development techniques & JAVA, HTML, DHTML & XML languages. Successful candidates will have a relevant Bachelor's degree in CS, EE or related and at least 4 yrs. exp. in software development consulting, at least 3 yrs of which is in web-based development of content management systems using HTML & XML. Resume to: Roundarch Inc., c/o Deloitte Consulting, attn Cathie Slocum, 2 Tower Center Blvd, East Brunswick, NJ 08816 or fax 732-296-6454.

Computer Support Specialist - Assist & maintain networked comp. system manag'g d/base, dvlpg customized reports thru integrated info system. Dvlp bilingual (Eng/Span) website & tech, SQL, applics & VB doc. Write interfaces & modify system to S. Amer format to meet needs of Latin Amer mkt. Train users. 35 hrs. 2 yrs coll Syst Engg or Info Syst (or for equiv) + 2 yrs exp. Fax resume & salary reqmts to Mr. Perez, (305) 275-4559.

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Systems Engineer to install and configure OneWorld ERP System. Install OneWorld Deployment and OneWorld Enterprise Server on Windows platform. Setup and Manager CNC activities of OneWorld ERP Systems. Install and provide assistance with Citrix Software. Perform Backup of the System (OneWorld & SQL Server). Create and configure non-standard OneWorld configuration. Bachelors Degree in Computer Engineering and Two Years Experience. Send resume to Bellsoft Inc. 8770 W. Bryn Mawr Ave., Suite 1300, Chicago, IL 60631

Systems Analyst. Job location: Boulder, CO. Duties: Use IBM mainframe comp. SP2/RS6000 in an AIX environ. to analyze & design techniques to spt. system develop. & integration testing. Develop tools & techniques for automation. Perform system admin., security, infrastructure design & build relating to Linux on Intel arch. Troubleshoot tech. defects in oper. system & hardware arch. Provide problem resolution. Mentor & train jr. systems administrators. Requires: B.S. (or foreign equiv.) in Comp. Sci., Eng. or a related field & 2 yrs. exp. in the job offered or 2 yrs. exp. as a Prog./Analyst, Consult. or IT Specialist. Concurrent exp. must incl. 2 yrs. exp. using IBM mainframe computers SP2/RS-6000 in an AIX environ. & 2 yrs. exp. troubleshooting tech. defects in oper. system & hardware arch. Send resume (no calls) to: Donald Crockett, CTG, Inc., 4699 Nautilus Court South, Ste. 101, Boulder, CO 80301-5306.

SOFTWARE ENGINEER
Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in IIS 5, VB, WINS, DHCP, NetIQ and NNM. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of IIS 5, VB, WINS, DHCP, NetIQ and NNM. Salary: \$80,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Site Manager, Armstrong County CareerLink, 1270 North Water Street, PO Box 759, Kittanning, PA 16201, Job No. WEB347292.

SENIOR SOFTWARE ENGINEER to design, develop, configure and debug real-time embedded software for GSM/GPRS cellular communication systems using SDL, C, C++ and Assembly language, as well as software configuration management tools including Clear case and Clear quest; Responsible for unit and integration testing of Layer 2 and Layer 3 of GSM/GPRS protocol stack software; Develop test scripts on Anite and R&S Protocol test systems for GSM/GPRS mobile station conformance specification. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 5 yrs of progressively responsible exp in the job offered or as a Programmer/Analyst or Programmer. Competitive salary offered. Apply by resume to: Nancy Geraghty, Panasonic Mobile Communications Development Corp. of USA, 1225 North Brook Pkwy., Suwanee, GA 30024; Attn: Job SP.

Network Systems Data Comm.
Analyst. Job location: New Castle, DE. Duties: Provide tech/infrastructure support & implem. services to Latin Amer. user base. Perform UNIX system admin. HP-TRU64-SUN & provide ops. support for Basic Cosmos appls. Perform proj. mgmt. on end-to-end tech. implem. on appls. CACLSweb, Exceller, Flexcube & E-credit appls. for Latin Amer. countries. Resp. for implem. of Oracle, migration of VAX appls. to UNIX, & install., design & rollout of NDM, MQ Series & OPC. Requires: B.S. (or foreign equiv.) in Comp. Sci., Eng. or a related field & 2 yrs. exp. in the job offered or 2 yrs. exp. as a Consultant or Specialist. Concurrent exp. must incl. 2 yrs. exp. providing tech/infrastructure spt. for Latin Amer. countries & 2 yrs. exp. performing UNIX system admin. Send resume (no calls) to: Molly Stone, CTG, Inc., 800 Delaware Ave., Buffalo, NY 14209-2094.

SOFTWARE ENGINEER
Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Oracle Financials 11i, TOAD, Discoverer 3i, Taviz Integration Studio & Biztalk. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Oracle Financials 11i, TOAD, Discoverer 3i, Taviz Integration Studio & Biztalk. Salary: \$85,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Fayette County CareerLink, Attn: CareerLink Program Supervisor, 32 Iowa Street, Uniontown, PA 15401, Job No. WEB347305.

Local Computer Consulting Company looking for the following:

Computer Programmer/tester
Person will be involved in creating test and production databases and tablespaces on different containers and raw devices. The bufferpool sizes are estimated, the database functions are done using software known as db2artisan extracting sql scripts, Migration, loading, reorganizing, etc. Tuning Parameters using benchmark testing methods using the DB2BATCH Utility. The different backup strategies like export, import environment: UDB7.1, AIX 4.3, DB2, Oracle 8.0.4, Win-NT. Rate of Pay: \$ 61,000.00/per year, Hrs:40/wk (8am-5pm). Must have bachelor's degree in computer science (or equivalence) + 2 years as a computer programmer or an information technology programmer. Must be willing to accept long term assignments at client's premises. Mail resume to: Case # 200:12945 Labor Exchange Office 19 Staniford St., 1st fl, Boston, MA 02214.

Computer/Info Systems
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Microsoft

by developing valued-added products that will fall under the System Center banner.

System Center will combine Microsoft's two main management offerings, Systems Management Server and Microsoft Operations Manager. A suite that bundles them is due next year, and the fully integrated product is targeted for 2006 or later, said David Hamilton, director of Microsoft's enterprise management division.

But Microsoft has kept its Web services management plans under wraps. Hamilton said Microsoft has been meeting with customers to try to get an understanding of their needs in that area and assess how those needs may differ from traditional client/server management issues.

"Our desire is really to try and find the customer pain point before we jump into the middle of Web services management," Hamilton said. He said short-term issues may be addressed next year in the System Center suite, and long-term user needs will be tackled later in the integrated product.

Until now, small vendors that focus on varying aspects of Web services management have done much of the customer courting. But by year's end, CA's Unicenter Web Services Distributed Management and HP's OpenView Web Services Management Engine should be ready. IBM's Tivoli division and BMC Software Inc. also have been adding Web services capabilities to existing offerings.

It's unclear how much those vendors' head starts will hurt Microsoft. An IT architect at a manufacturing company that has been building Web services using Microsoft tools said his team had to move ahead with products that are working now. He said he will

have to carefully evaluate Microsoft's offerings.

"The real question will be the maturity. The start-ups out there are really galloping away," said the IT architect, who asked not to be identified. "But everybody is at least going to have to pay attention to what Microsoft offers. When that elephant steps in the room, it doesn't matter how many mice have stepped in the room before [it]."

Few companies have built so many Web services that they have begun seeking tools to manage them. Analysts said demand is just starting to emerge, and they don't expect it to become widespread for another year or two.

Christopher Casgar, a senior architect at Wipro Ltd., said the firm's Newton, Mass.-

based NerveWire division has been building Web services for companies in the financial, manufacturing and retail industries. But clients are just "kicking the tires" when it comes to Web services management, he said.

William Norman, assistant vice president of research and presentation services at OppenheimerFunds Inc. in New York, said his company has found the management capabilities of its application server from BEA Systems Inc. to be sufficient to manage its dozen internal Web services.

Likewise, John Morrison, CIO at Motor Coach Industries Inc. in Schaumburg, Ill., said his company uses its IBM WebSphere application server and homegrown tools to manage its Web services and has

HP's OpenView and Tivoli products for overall systems management. He said he doesn't see the management of Web services as separate from other management needs.

"The ideal world is that they include it all in one big package and keep it all at the same price," Morrison said. "But [offering] separate products is not bad, depending on how they're going to license and price it."

Carroll Pleasant, an associate analyst in the emerging technologies group at Eastman Chemical Co. in Kingsport, Tenn., said there's no consensus about what a Web services management tool should do. So far, his company has seen a need to manage the security model, the orchestration between Web services, the debugging and monitoring

of services, fail-over capabilities, caching and data transformation. But Pleasant said he found a set of confusing choices from small start-ups when he looked for a vendor.

Corey Ferengul, an analyst at Meta Group Inc., said the major vendors are investing in Web services management standards before they make a more serious foray into the space. CA, HP and IBM are all involved in work with the Organization for the Advancement of Structured Information Standards.

"We haven't done a very good job of managing traditional client/server applications," said Cameron Haight, an analyst at Gartner Inc. "Now Web services applications take that to yet another layer of complexity." ▀

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Visa Reform

nization for the Rights of American Workers (TORAW) in Meriden, Conn., was formed less than a year ago. One of the group's founders, James Pace, a laid-off IT consultant, learned the ropes of activism in the early 1970s, when he fought the state's motorcycle helmet law. "It all comes down to backyard politics," said Pace.

Among other activities, TORAW attended an open forum meeting that Rep. Nancy Johnson held in her Connecticut district several months ago. Six TORAW members in the audience peppered Johnson with questions about the visa programs. "We took over the whole meeting," said Pace. Subsequent local newspaper coverage focused on offshore outsourcing.

On July 28, Johnson, a Republican, joined Democratic Sen. Christopher J. Dodd of Connecticut in sponsoring the USA Jobs Protection Act to reform the visa laws.

In a hearing late last month on the L-1 visa, Dodd said that from 1997 to 2000, some 3.4 million H-1B and L-1 visas were approved, 70,000 in Connecticut alone. Dodd said a growing body of anecdotal evidence suggests abuse.

The L-1 allows companies to transfer foreign employees with specialized skills into the U.S. But critics contend the program brings in foreign replacements who will be trained to take over IT jobs held by U.S. citizens.

The H-1B, a visa that lets firms bring skilled workers into the U.S. for up to six years, is also a hot issue. But its cap will shrink from 195,000 to 65,000 in October; the L-1 has no cap, though DeLauro's bill would impose a 35,000 limit.

One day after Dodd and Johnson introduced their bills, the Information Technology Association of America released a memorandum suggesting L-1 program reforms,

including the visa's requirement that employees have some "specialized knowledge." The ITAA wants a more restrictive definition of what specialized knowledge entails.

Legislative restrictions such as those imposed in DeLauro's bill would hurt the ability of U.S. firms "to move people around globally," said Jeff Lande, a vice president at the Arlington Va.-based ITAA.

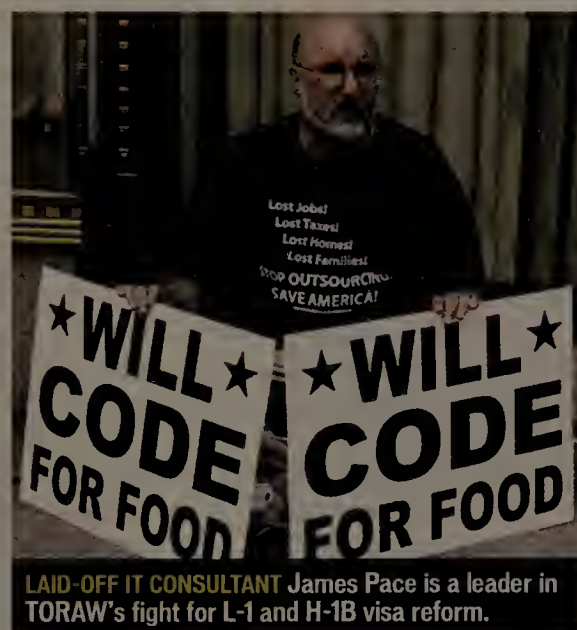
Offshore work is a hot issue in other states as well, but Con-

necticut is known for its high wages and a heavy concentration of financial services firms, which are major offshore users.

Donald Klepper-Smith, chief economist at consulting firm Scillia Dowling and Natarelli LLC in New Haven, Conn., said Connecticut employers face a cost of doing business that's 12% higher than the national average. The state has shed 46,000 jobs since mid-2000, out of an employment base

of about 1.65 million. "Basically, we're flat-lining in the state of Connecticut," he said.

Pace, who said TORAW co-founder John Bauman also deserves credit for the group's success, realizes that the provisions in some of the bills won't appease all critics. But the chief goal is to get legislators to work together. Meanwhile, TORAW is recruiting members outside of Connecticut. "I know we can do it in other states," said Pace. ▀



LAI-OFF IT CONSULTANT James Pace is a leader in TORAW's fight for L-1 and H-1B visa reform.

FRANK HAYES ■ FRANKLY SPEAKING

Details, Details . . .

I HEARD RECENTLY FROM THE SCO GROUP'S PR director about my July 28 column ["SCO's Shell Game," QuickLink 40134]. "Your article was all correct except for one part," wrote Blake Stowell. "You wrote that [SCO] threatened darkly that if someone didn't start buying Unix licenses soon, it would sue Linus Torvalds.' That phrase comes from an article that CBS MarketWatch published a few months back after doing an interview with Darl McBride, president and CEO of SCO. I called that editor back and was adamant that Darl McBride had never said that. . . . He looked back over his notes and agreed that Darl never said that and made a correction to remove that phrase or sentence."

For the record, MarketWatch.com has issued no such correction,

and that sentence is still in the May 28 story in the archives on MarketWatch's Web site.

Still, it's nice to know SCO agrees that everything else in my column was correct. But SCO seems to be having a devil of a time getting the details right lately.

And details are about to become a much bigger issue for SCO, now that Red Hat has sued SCO for interfering with its Linux business (see story, page 14).

Last week Red Hat asked a federal court to issue a declaratory judgment that it hasn't infringed on SCO's copyrights or trade secrets. It's like a copyright infringement lawsuit turned inside out: Instead of SCO's threatened suits to declare Linux users guilty of infringement, this is a suit to have Linux declared innocent.

Full disclosure: Two *Computerworld* columns I wrote are quoted in the Red Hat lawsuit, as are comments from analysts at Gartner, Illuminata, Deutsche Bank and Merrill Lynch. However, I have no legal, financial or personal connection with Red Hat. Its lawyers haven't talked to me. They didn't even spell my name right.

But I can already guess that Red Hat's argument will go like this:

None of the code in Linux is illegally similar to Unix code.

But even if it is similar, that similarity isn't the result of copying.

But even if it is the result of copying, the code wasn't copied from Unix source code.

But even if it was copied from Unix, SCO doesn't properly own copyrights for Unix source code.

But even if SCO does own the Unix copyrights, SCO forfeited control of any code in Linux when it shipped Linux products under the General Public License (GPL).

But even if SCO didn't forfeit that control under the GPL, the Unix code wasn't used illegally because the generic functions it implements aren't protected by copyright.

That's a lot of "even ifs." And if that sounds like a lot of weaselly legalese — can't these guys make up their minds on an argument? — that's just the way a case for a declaratory judgment is structured. Every "even if" represents a condition that *must* be met for there to be copyright infringement.

So to protect its infringement claims, SCO will have to show the court that its claims can pass every one of those "even if" tests.

That means that in the days to come, we'll get lots of details on the disputed Linux code and SCO's legal theories — details that have been sorely lacking in SCO's claims over the past six months or so.

It also means that Linux developers will finally have an opportunity to learn exactly what they're being accused of — and get a chance to clean it up to make Linux street-legal. Assuming there really is any Linux code that infringes on Unix copyrights.

That's probably not the endgame SCO would prefer — it won't help SCO's stock price at all. But as SCO hopes to cash in on its threats to Linux, the devil really may be in the details. ▀



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It Just Never Stops

Why is this print queue so backed up? wonders IT pilot fish. Turns out users at a remote site have made the printer vanish from the network. "When we called them, they explained to us that they had placed the disconnected printer in a storage closet," fish groans. "They thought that would stop the printing and never bothered to call IT to stop transmitting the documents."

Thick

Big electronics company is building a factory for a joint

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member conversion team has spent a year busily writing pro-

grams to convert data from the old, unknown system to the new, undefined system. Fish says, "I never did ask to see any of their programs or test data."

But the locally hired IT manager is a little fuzzy on some details, says a pilot fish working there. "The general manager told him to build a raised floor in the computer room," fish sighs. "A month later, we saw it — he literally raised the floor six inches by pouring a cement slab six inches thick."

But How?

Senior VP asks IT pilot fish to generate a data model for some consultants. Fish explains that he has the company's only license for the modeling software, which generates a proprietary file format. But he can provide a printout of the model. "Fine," says the VP. "But perhaps you could e-mail it to the consultants as well."

Aha!

User has gotten her third replacement monitor in as many months, so support pilot fish checks it out — and finds water under the monitor, but no source of a leak. The next day, he's walking by and catches the user's new secretary in action. "I explained to her that watering a plant on top of any electronic equipment is a bad idea," says fish. "And that maybe watering an artificial plant wasn't the best use of her time either."

Y2k Plus Three

The phones for this state agency go down almost daily, so pilot fish hunts down the cause. "The phone system formerly belonged to the state capitol," reports fish. "They got rid of it because it wasn't Y2k-compatible. And it still isn't, but there's no money to replace it. So we just get it 'fixed' and working on a temporary basis — each and every time it breaks."

Afraid to Ask?

Big publisher is well into a \$50 million system rewrite when consultant pilot fish arrives — briefly — to help. "The legacy system was very old and not documented at all," fish reports. "The new system was still in design." But the eight-

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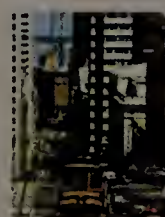
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